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JOURNAL *Oklahoma State Medical Association*

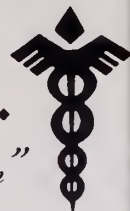


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CONTENTS

- 1 Rising Costs and Falling Heroes
- 2 President's Page
- 3 The Effects of Steroids on Soft Tissue and Intra-Articular Structure — A Literature Review, *Gary Watts, MD* and *William A. Grana, MD*
- 8 Report of the American Medical Association Council on Scientific Affairs
- 13 OSMA Public Opinion Survey Assesses Attitudes On Issues In Medicine
- 17 News From The Oklahoma State Department of Health
- 18 AMA Heads National Program Aimed at Curbing Drug Abuse
- 18 Research Group Breaks Ground on Electron Microscopy Unit
- 19 OU, VA Consultative Service Aids Ill and Aging Patients
- 21 Oklahoma Team Implants Pump in Patient with Liver Disease
- 22 Deaths
- 22 In Memoriam
- 24 OSMA Rebutts AP News Story on Opinion Survey Results
- 24 Hospital Offers Accredited Smoking Cessation Program
- 25 Book Reviews
- 27 Reaction Time
- 28 New Medical Update Brochure Gives Advice on Frostbite
- 28 Miscellaneous Advertisements
- xxxi Auxiliary
- xxxii The Last Word

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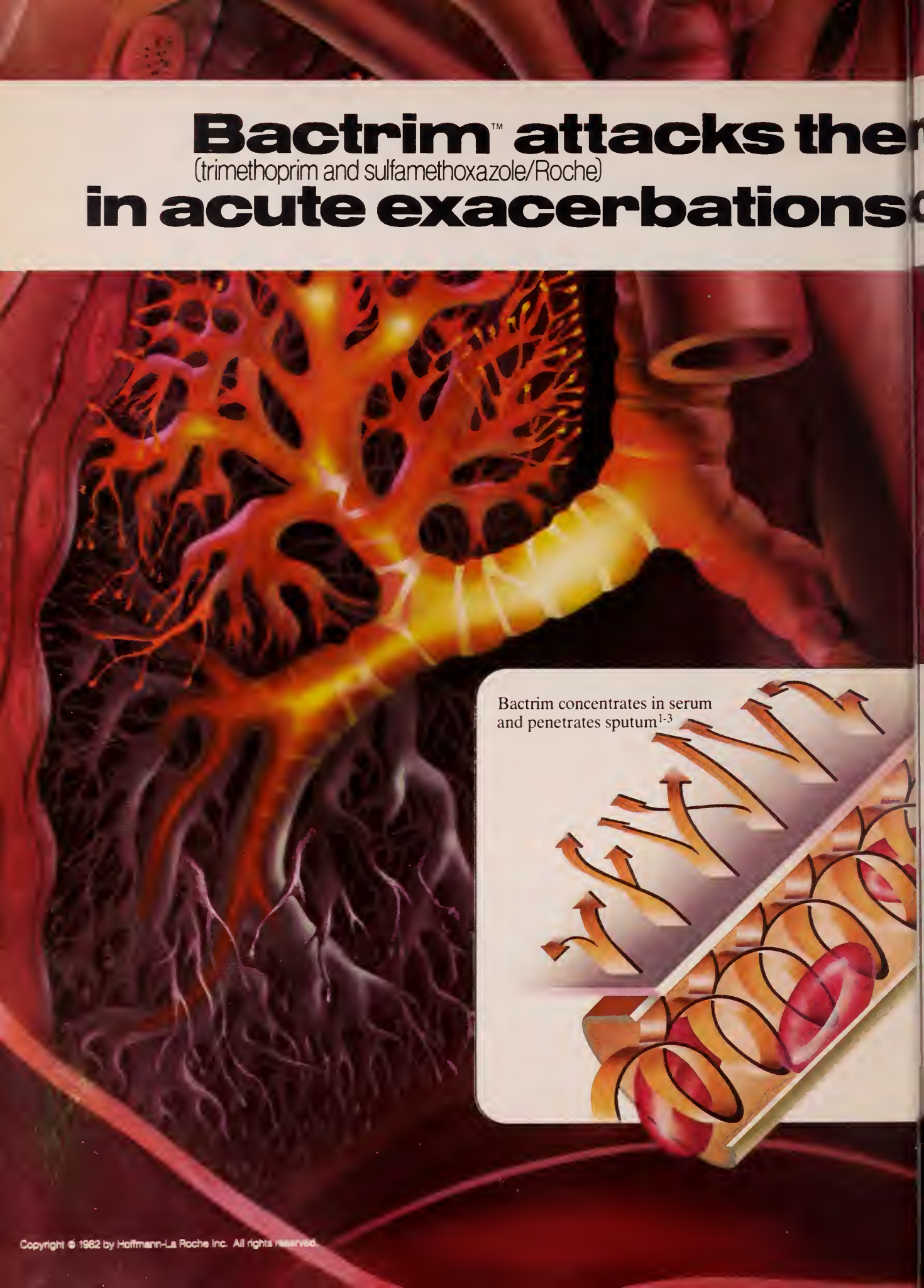
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Bactrim™ attacks the (trimethoprim and sulfamethoxazole/Roche) **in acute exacerbations**



Bactrim concentrates in serum
and penetrates sputum¹⁻³

The background of the advertisement is a detailed anatomical illustration of the human respiratory system, specifically the lungs. A central bronchus is highlighted in a bright yellow-orange glow, indicating the site of infection or inflammation. The surrounding lung tissue is depicted in various shades of red and purple, showing the complex branching structure. In the lower right corner, there is a white rectangular inset box. Inside this box, a diagram illustrates the mechanism of Bactrim's action. It shows a cross-section of a surface with several orange arrows pointing upwards, representing the penetration of the drug into the sputum. Below this, a red, oval-shaped object is shown being pulled into a channel, further illustrating the drug's ability to reach the site of infection.

major pathogens of chronic bronchitis*

Bactrim clears sputum of susceptible bacteria

In sputum cultures from patients with acute exacerbations of chronic bronchitis, *H. influenzae* and *S. pneumoniae* are isolated more often than any other pathogens.^{4,5} One study of transtracheal aspirates from 76 patients with acute exacerbations found that 80% of the isolates were of these two pathogens.⁵

Bactrim is effective *in vitro* against most strains of both *S. pneumoniae* and *H. influenzae*—even ampicillin-resistant strains. And in acute exacerbations of chronic bronchitis involving these two pathogens, sputum cultures taken seven days after a two-week course of therapy showed that Bactrim eradicated these bacteria in 91% (50 of 55) of the patients treated.⁶

Bactrim reduces coughing and sputum production

In three double-blind comparisons with ampicillin *q.i.d.*, Bactrim DS proved equally effective on all clinical parameters.^{7,9} Bactrim reduced the frequency and severity of coughing, reduced the amount of sputum produced and cleared the sputum of purulence.

Bactrim has the added advantages of *b.i.d.* dosage convenience and a lower incidence of diarrhea than with ampicillin, and it is useful in patients allergic to penicillins.

Bactrim also proved more effective than tetracyclines in 10 clinical trials

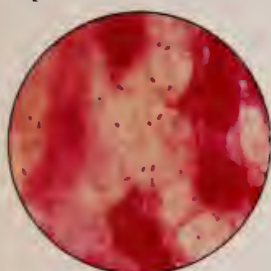
involving nearly 700 patients.¹⁰ Overall clinical condition of the patients, changes in sputum purulence, reduction in sputum volume and microbiological clearance of pathogens—all improved more with Bactrim therapy than with tetracyclines. G.I. side effects occurred in only 7% of patients treated with Bactrim compared with 12% of tetracycline-treated patients. (See Adverse Reactions in summary of product information on next page.)

Bactrim is contraindicated in pregnancy at term and nursing mothers, infants under two months of age, documented megaloblastic anemia due to folate deficiency and hypersensitivity.

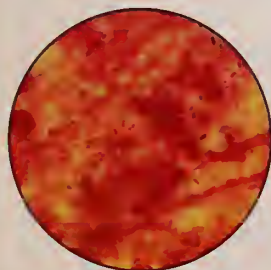
Bactrim DS. For acute exacerbations of chronic bronchitis in adults* when it offers an advantage over single-agent antibacterials.

References: 1. Hughes DTD, Bye A, Hodder P: *Adv Antimicrob Antineoplastic Chemother* 1/2:1105-1106, 1971. 2. Jordan GW et al: *Can Med Assoc J* 112:91S-95S, Jun 14, 1975. 3. Beck H, Pechere JC: *Prog Antimicrob Anticancer Chemother* 1:663-667, 1969. 4. Quintiliani R: Microbiological and therapeutic considerations in exacerbations of chronic bronchitis, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts*; Princeton Junction, NJ, Communications Media for Education, Inc., 1980, pp. 9-12. 5. Schreiner A et al: *Infection* 6(2):54-56, 1978. 6. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 7. Chodosh S: Treatment of acute exacerbations of chronic bronchitis: results of a double-blind crossover clinical trial, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts*. *Op. cit.*, pp. 15-16. 8. Chervinsky P: Double-blind clinical comparisons between trimethoprim-sulfamethoxazole (Bactrim™) and ampicillin in the treatment of bronchitic exacerbations. *Ibid.*, pp. 17-18. 9. Dulfano MJ: Trimethoprim-sulfamethoxazole vs. ampicillin in the treatment of exacerbations of chronic bronchitis. *Ibid.*, pp. 19-20. 10. Medici TC: Trimethoprim-sulfamethoxazole (Bactrim™) in treating acute exacerbations of chronic bronchitis: summary of European clinical experience. *Ibid.*, pp. 13-14.

attacks *H. influenzae*—even ampicillin-resistant strains



attacks *S. pneumoniae*



**Economical
b.i.d.**

Bactrim™ DS

(160 mg trimethoprim and 800 mg sulfamethoxazole/Roche)

*Due to susceptible organisms. Please see next page for summary of product information.

Bactrim™

(trimethoprim and sulfamethoxazole/Roche)

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli*, *Klebsiella-Enterobacter*, *Proteus mirabilis*, *Proteus vulgaris*, *Proteus morganii*. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. *Note:* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonia.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL

PHARYNGITIS. Clinical studies show that patients with group A β -hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: General: Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions:* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea, pseudomembranous colitis and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients, cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: Not recommended for infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:

Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 14 days.

PNEUMOCYSTIS CARINII PNEUMONITIS

Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

Supplied: Double Strength (DS) tablets, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100; Tel-E-Dose® packages of 100; Prescription Paks of 20 and 28. Tablets, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 40. Pediatric Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry flavored—bottles of 100 ml and 16 oz (1 pint). Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); fruit-licorice flavored—bottles of 16 oz (1 pint).



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Rising Costs and Falling Heroes

Few if any Americans would disagree with the view that practitioners of the medical professions, especially physicians, have suffered a substantial loss of public stature and prestige in the past thirty years. It is true that virtually all social institutions and authoritarians have faced similar fates but the magnitude of the loss has been less spectacular than the denigration of the once peerless medical profession.

We are of course anxious to discover the causes of our defamation and have sponsored numbers of projects dedicated to such discovery. If any of the projects have succeeded, none has suggested an effective remedy. Sorting out incalculable influences we blame the media, the claims lawyers, the insurance industry, the bureaucracy, the labor unions, the socialists, the hospitals and our own professional organizations. Some of us have had the temerity to blame even ourselves. Culpability, however, relates to causes rather than effects and the results of our loss of stature are even more complex and possibly more obscure than the causes. Every physician is affected by every word he reads and hears about himself, his colleagues, his profession and its institutions. If the words are complimentary, he feels good about himself, his work and his dedication. If they are words of defamation or excessive criticism and condemnation, he feels bad. He feels threatened and resentful.

A physician's ego is well-developed if not insatiable. If it were not he could not have endured the ordeal of becoming a physician. He is by nature and by years of disciplined training, a sensitive, responsive and perceptive human being. Thus, when he feels assaulted he perceives that he must react defensively. He assumes a defensive, sometimes confrontational posture with all his patients, even those who have been his friends for decades. He with-

draws from an open, trusting relationship and views his involvement with more objectivity. He reviews his diagnoses and treatments not as they relate to his experience and judgment, but as they relate to his potential liability. New technology is appraised by the application of two standards; how it can benefit the patient and how it can serve the physician in defending the accuracy of a diagnosis and the propriety of a treatment. Essentially, this change in the physician's attitude about his role results in a sharp increase in the cost of medical care, defined and categorized as defensive practices. But the influences which result in these practices are much more subtle than those which explain the traditional concept of "defensive medicine." The physician himself may deny that he is practicing defensive medicine, believing that he is practicing better medicine, a belief which, in many circumstances, is justified.

Hidden in the shadows of such practices, however, is the fact that there has been a serious diminution in the trust and confidence once shared by patients and physicians. Today, patients, rarely accept with unquestioning faith what their physicians tell them. They pursue second opinions, nourish controversy and harbor suspicions. Whether the public welfare is thus more or less secure is another issue. The fact is, the cost of medical care rises as the public stature of the physicians declines.

Ironically, the loudest cries of outrage about the rising cost of medical care emanate from the same sources which espouse the damnation of physicians, hospitals and the AMA. But as we have fallen victim to a variety of exposés, documentaries and revelations, our patients have fallen victim to unaffordable prices for their medical care. As the attacks continue, defenses will become more elaborate and the cost of medical care will continue to rise. The relationship is direct and the results are inevitable.

MRJ

Upon the request of Mr Lloyd Rader, Director of the Oklahoma State Department of Human Services, the Oklahoma State Medical Association presented to him, in October, 1982 a position paper regarding the anticipated decline in revenue to the Department of Human Services, and the manner in which this decline should be treated in financing the continuing services of the Department. This task of formulating our position was given to the Council on Medical Services, chaired by Dr John A. Blaschke of Oklahoma City. This council, after long and arduous consideration of the many factors involved in the problem, produced an excellent document which delineated the position of the OSMA in brief and forthright manner. The Council is to be highly commended for this paper.



This position paper was given by hand to Mr Rader on October 14, 1982. The main paragraph stated the following:

The Oklahoma State Medical Association continues to regard the maintenance and improvement of quality care as the primary objective in caring for all patients. The objective of the Medicaid program has been stated to be the provision of acute medical care for those patients in the low income groups who are eligible. As Medicaid funds are reduced, some form of rationing must be employed in order to meet these requirements. The first priority should be medical necessity, which will require setting priorities in order of importance and degree of life

threatening necessity for this care. The elimination of less vital or essential programs such as medical transportation, family planning, alternate care programs and a number of social non-medical programs is essential. The reduction of allowed numbers of hospital days, amount of ancillary services rendered and physician payment might also be necessary, but must be consistent with continued quality of care and the medical necessity of care.

In November, Mr Rader formed a Task Force, chaired by Walter Brown, MD, in Tulsa, whose mission is to formulate plans to meet the necessary reduction in Medicaid budget funds for the next fiscal year. The President of OSMA is a member of this task force. The group met November 16, and is in the process of gathering information on this project. There are many, many unknowns in this equation at this time, including the amount of budget reduction necessary, revenues available, legislative action forthcoming (particularly in separation of services from the department), and disposition of the Oklahoma Health Sciences Center teaching hospitals, and many others. The recommendations of this Task Force to Mr Rader, and to Mr Henry Bellmon, the new Director, should play a key role in the actions of the Welfare Commission and the State Legislature in the final solution of this problem.

The position paper of the OSMA must and will be emphasized throughout these deliberations. The Council on Medical Services should receive all our thanks for a vital task done in a most timely and excellent fashion.

John A. Blaschke MD

The Effects of Steroids on Soft Tissue and Intra-Articular Structure A Literature Review

GARY WATTS, MD
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Even a single dose of steroid will produce changes in connective tissue or articular cartilage. The clinical implication is that steroids must not be used indiscriminately for acute and chronic inflammation of soft tissue nor for synovitis, effusion or hemoarthrosis.

Abstract

Experimental evidence indicates that glucocorticoid injections are harmful to connective tissues and articular cartilage. These effects begin *after a single injection, and are cumulative*. They begin with a metabolic derangement consisting of anti-anabolic cellular effects progressing to frank catabolism and cell degeneration. There is early selective inhibition of cellular protein synthesis. The early metabolic alterations are reversible; however, they can result in cell death. More impor-

tantly, they predispose to irreversible mechanical damage and anatomic changes.

1. Glucocorticoids cause a decrease in the synthesis of all major matrix components.

2. The loss of proteoglycan content leads to a decrease in cartilage stiffness.

3. In non-weight-bearing areas, the cartilage is able to maintain its structural integrity, while the impact of cyclic loading causes death of cells, cystic degeneration of matrix, and fissuring in the mid-zonal areas of weight-bearing cartilage.

4. The experimental evidence is that even single-dose steroid injections will produce change in the articular surface of joints as enumerated above. The clinical implication is that steroid must **not** be used indiscriminately for synovitis, effusion, or hemoarthrosis.

Steroids have been an important clinical tool for the management of inflammatory conditions of the soft tissues and joints over the past 30 years. Particularly important to the clinician has been the use of injectible glucocorticoids in the short- and long-term management of inflammatory musculoskeletal disorders.

Hollander, advocated intra-articular steroid injection for local management of arthritis in a

classical paper published in 1951.¹ His investigation encouraged local injection for the treatment of rheumatoid arthritis, osteoarthritis, "acute traumatic arthritis" (sprain), synovitis, acute gouty arthritis, bursitis, and systemic lupus erythematosus. Hollander felt that repetition of this treatment was appropriate as needed and that adverse local and systemic effects were infrequent. For the next ten years, this clinical application of steroid

"Glucocorticoids are felt to exert their effect at the intracellular level by first penetrating the cell membrane and then binding to a specific cytoplasmic receptor protein."

gained widespread acceptance. However, eventually articles began to appear which suggested that there were serious side effects following steroid injection.^{2, 3, 4, 5} Case reports appeared demonstrating that accelerated articular degeneration followed multiple intra-articular injections of steroid when used in the treatment of osteoarthritis and rheumatoid arthritis. Investigations focused on the metabolic and anatomic effect of steroids in the connective and articular soft tissues. The purpose of this paper will be to define the rationale and indications for local steroid use based on a review of its effects on connective tissues.

Classification and Properties of Glucocorticoids

Glucocorticoids are steroid molecules with numerous metabolic and physiologic effects. The existence of glucocorticoid activity depends on the presence of a *hydroxyl group* at carbon number 11 of the steroid molecule. Thus, cortisone and prednisone, which are 11-keto compounds, lack glucocorticoid activity until converted in vivo to cortisol (the body's endogenous glucocorticoid) and prednisolone, the corresponding 11-beta-hydroxyl compounds. This transformation occurs predominantly in the liver. Accordingly, the local or intra-articular anti-inflammatory action of cortisone is minimal compared with the effect of cortisol. All glucocorticoid preparations

marketed for topical or local use are 11-beta-hydroxyl compounds.

The important differences between the available glucocorticoid compounds are duration of action, relative potency, and relative mineralocorticoid activity. Commonly used glucocorticoids are categorized as short-, intermediate-, and long-acting on the basis of the duration of ACTH suppression following a single dose, equivalent in anti-inflammatory activity to 50 mg of prednisone.

Although it is important to consider the systemic effects of glucocorticoids in those patients treated by oral or parenteral therapy, it is equally important to appreciate the local behavior of glucocorticoids. This behavior follows the principles outlined except that soft tissue absorption must be considered. The soluble glucocorticoid esters generally are given intravenously for rapid systemic effect and the less soluble suspensions are injected locally for prolonged effects. It has been well documented^{6, 7} that intra-articular injection of some of the more soluble compounds results in rapid absorption and systemic effects. Therefore these soluble compounds should be avoided for such injections.

Tissue Effect of Glucocorticoids

General

Glucocorticoids are felt to exert their effect at the intracellular level by first penetrating the cell membrane and then binding to a

". . . Insoluble glucocorticoid preparations should be reserved for deep injections in sites such as joints, bursae, and muscle."

specific cytoplasmic receptor protein.⁸ This steroid-receptor complex then enters the nucleus where it binds reversibly to chromatin, possibly DNA itself. It modifies transcription of DNA into RNA thereby influencing either directly or indirectly the amount or activity of specific messenger RNA. These messengers carry the code for enzymes or other proteins which produce the observed hormonal effects. Glucocorticoids are also felt to have a direct influence on the stability of lysosomal

membranes⁹ and may participate in the activation of a dermal protease.¹⁰

The tissue response to glucocorticoids is either catabolic or anabolic. Many tissues such as muscle, skin, lymphoid, or adipose, undergo the follow metabolic changes: decreased synthesis and increased degradation of protein, fat, RNA, and DNA, and decreased uptake of glucose and amino acids. Conversely, the liver responds with an increased production of proteins, RNA, and glucose. In general, the actions of glucocorticoids on carbohydrate, protein and lipid metabolism result in a sparing of glucose and a tendency to hyperglycemia. Carbohydrate tolerance is decreased.

Skin and Connective Tissues

Glucocorticoids exert a profoundly negative effect on wound healing. This means a possibility for wound dehiscence when used locally. There is a decrease in fibrocytes and collagen formation resulting in an overall inhibition of scar formation.

Houck¹¹ found that small subcutaneous doses of cortisol led to an immediate (one to seven days) decrease in hydroxyproline (collagen) and hexosamine (ground substance). A later study¹⁰ using intraperitoneal cortisol injections of a slightly higher concentration revealed a 22% decrease of insoluble skin collagen within two hours, which Houck attributed to collagenolysis secondary to direct steroid activation of an extracellular dermal protease.

Distefano¹² in 1972 recounted his experience with steroid-induced skin changes. He found skin atrophy to be a complication of local injection with symptoms and signs outlasting the original process.

The injection of insoluble glucocorticoid in intradermal sites led to atrophy, alopecia, telangiectasia, and hypopigmentation. Similar changes of decreased severity and duration were seen following deep intradermal and subcutaneous injection respectively. He advised that insoluble glucocorticoid preparations should be reserved for deep injections in sites such as joints, bursae, and muscle. Soluble preparations were better for more superficial structures.

Articular Cartilage and Associated Structures

In general, cortisol and all of the synthetic glucocorticoids inhibit chondrocyte production of protein polysaccharides (notably chondroitin sulfate), the major constituents of articular cartilage ground substance. The degree of inhibition correlates directly with steroid concentration and has been shown in tissue culture¹³ to occur even at physiologic cortisol concentration (10% inhibition). It has been proposed that the decreased synthesis results from an inhibition of sulfation of the polysaccharide portion of the molecule. The effects of this inhibition are very important because there is a rapid turnover of ground substance (a half life of several days¹⁴) which if not replaced, will lead to a loss of elasticity of cartilage.

"Steroids used with moderation in pharmacological doses with few repetitions may not be harmful in generalized connective tissue problems such as rheumatoid arthritis."

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age and presents as the changes of chondromalacia.¹⁵

In some studies the inhibition of protein of polysaccharide production has approached 80% with high-dose intra-articular injections. The inhibition and subsequent time for recovery¹⁶ of synthesis seems to increase in a cumulative manner with repeated frequent injections. Articular cartilage is suppressed in an analogous manner.^{7, 17-21} Mankin⁷ demonstrated a 40% decrease in the synthesis of collagen in rabbit

articular cartilage within two hours after intra-articular cortisol administration. The inhibition is again dose-related and recovery is prolonged with cumulative injections. This dose activation was confirmed in another paper by Mankin¹⁸ in which rabbit cartilage synthesis of collagen was inhibited for three and fourteen days after single intra-articular cortisol injections of 0.25 mg and 2.5 mg respectively. The effects of decreased collagen synthesis in articular cartilage are not so immediately apparent since the collagen half life is much longer. A paper by Vitto²² in 1971 compared the effects of the newer synthetic glucocorticoids to those of cortisol on collagen biosynthesis by chick embryo cells. He found that fluocinolone acetonide, fluclorolone acetonide, betamethasone-17-valerate, fluprednylidene-21-acetate, and hydrocortisone acetate all inhibit collagen biosynthesis equally when given in equivalent amounts.

A study of the effect of glucocorticoid excess on human connective tissue cells in vitro was carried out by Castor.²³ He obtained synovial tissue from fresh amputation specimens and cultured these specimens with hydrocortisone, methylprednisone, and prednisolone. Induced modifications of cell function included accelerated proliferation, reduced cell volume, reduced hyaluronate synthesis, and decreased collagen deposition. These changes were rever-

"Anatomic abnormalities of articular cartilage resulting from glucocorticoid use are well documented. They again appear to be related to the dose and frequency of injection, with cumulative effect."

sible with variable lag periods ranging from days to weeks upon omission of the steroid from the tissue culture.

Anatomic abnormalities of articular cartilage resulting from glucocorticoid use are well documented.^{15, 20, 23-28, 30} They again appear to be related to the dose and frequency of injection with cumulative effect. Grossly, one sees dull, grey white cartilage with small irregular whitish plaques within the cartilage. Micro-

scopic changes are loss of ground substance, fibrillation, fissuring, and cystic changes. Chondrocyte nuclear degeneration occurs in the tangential and transitional layers.

Ultrastructurally there are changes which consist of decreased cell size, underdeveloped endoplasmic reticulum, bloating of the golgi apparatus and glycogen deposition. Later regressive changes include cytoplasmic vacuoles, osmophilic inclusions and cell death with formation of fibrillar microscars in the matrix.

The model of glucocorticoid effect on articular cartilage proposed by Behren²¹ describes the sequence of changes in the articular cartilage of rabbits after intra-articular glucocorticoid injection. He found a progressive loss of proteoglycan (protein polysaccharide) concentration in the matrix with repeated steroid injections. The creep displayed by articular cartilage is proportional to the proteoglycan concentration. In weight-bearing joints, a loss of stiffness leads to increased compression of the cartilage under loading. Because the surface layer which consists mainly of collagen fibers, has a greater stiffness than the middle layer, this increased compression affects mainly the middle zone, where it causes direct mechanical damage to the chondrocytes resulting in cell death and cystic degeneration. The changes in cartilage stiffness secondary to proteoglycan loss may affect the load-bearing properties of the collagen fibers in two ways: repeated overload of the surface layers could fatigue and fracture the collagen fibers, and an increase in cartilage deformation will increase the tangential forces at the surface and possibly lead to a disruption of collagen fibers. Both mechanisms, if applicable, could explain the progressive fissuring observed on all weight-bearing surfaces.

Current Orthopedic Usage of Glucocorticoids

The current indications and methods for local steroid treatment of musculoskeletal disorders are not well defined. Several rheumatology texts²⁸ have sections on steroid use which refer to oral therapy for rheumatoid arthritis. It is likely, that local steroid injections are still administered in much the same way as Hollander¹ recommended in 1951, and despite the body of evidence which documents the adverse local effect of steroid, Hollander,³¹ as recently as 1974, continued to advocate the use of multiple intra-articular steroid injec-

tions in the treatment of rheumatoid arthritis. Steroids used with moderation in the pharmacological doses with few repetitions, may not be harmful in generalized connective tissue problems such as rheumatoid arthritis. On the other hand the rationale for similar use in osteoarthritis or in traumatic inflammation of a joint is not supported due to the evidence of deleterious effects of the steroid on articular cartilage. The best available evidence supports the approach that steroids should be avoided for intra-articular use except for short-term symptomatic relief in the elderly patient with radiographic evidence of articular degeneration. Non-articular injection may be used sparingly for acute and chronic inflammation in soft tissues. The exception would be tendons about weight-bearing joints.

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Report of the American Medical Association Council on Scientific Affairs

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John A. McIntyre, MD, President of the OSMA.*

Subject: Estrogen Replacement in the Menopause — 1981, (Board of Trustees Report X, I-80)

Presented by: William D. Dolan, MD, Chairman

Referred to: Reference Committee E (John J. Gaughan, MD, Chairman)

The Council on Scientific Affairs, in response to one element of Recommendation 5 of Board of Trustees Report X, "Ad Hoc Committee on Women Physicians in Organized Medicine," which was referred to the Board at the 1980 Interim Meeting, has considered certain aspects of the medical treatment of the menopausal woman. Physicians and their patients have become understandably apprehensive because of recent reports relating an increase in endometrial cancer to the post-menopausal use of estrogen compounds.

In July 1977, the Commissioner of the FDA issued a new warning for the labeling of all estrogenic compounds.¹ In September 1979 an NIH Consensus Development Conference was held on "Estrogen Use and Post-Menopausal Women."² It is the intention of this report to place these presentations and certain subsequent commentary³⁻⁸ in perspective for the practicing physician.

Benefit of Estrogen Therapy

1. *Relief of vasomotor flushes*

An estimated 75% of women experience vasomotor flushes in the peri-menopausal period or later, and the problem continues for five years or more in 20% of these women. Although a placebo effect has been demonstrated consistently, estrogen has a further significant effect in reducing the intensity and the number of episodes. Estrogen is the most effective drug for this indication. Other drugs that have been used (eg, when estrogen is contraindicated) and that are less effective, include medroxyprogesterone, clonidine, and propranolol. Symptoms may be expected to appear after discontinuation of estrogens, and a gradual withdrawal regimen best alleviates this problem. The dosage necessary to control or reduce vasomotor flushes varies considerably from person to person and from one estrogen preparation to another.

2. *Vaginal atrophy*

Many post-menopausal women experience symptoms referable to atrophy of urogenital tissues (eg, vaginal irritation, dyspareunia,

** This report is not intended to serve as a standard of medical care: standards of medical care are determined locally, are constantly subject to change and are established on the basis of all the several facts of the individual case.

symptoms of sterile urethritis). The vagina, urethra, and bladder trigone share a common embryological origin and all respond to estrogen therapy. Estrogen stimulates proliferation of vaginal and urethral epithelium and relieves these conditions. Topical estrogen preparations can relieve these symptoms, but oral dosage forms are also effective. Atrophic urogenital symptoms may recur, and then respond each time to yet another course of treatment.

3. *Osteoporosis*

The incidence of osteoporosis increases when endogenous estrogen production is reduced by natural or surgical menopause. Because of this complication of aging, 25% of Caucasian women over 60 years of age, suffer vertebral compression fractures. It is thought that women of slight frame, fair complexion, sedentary habits or with a family history, as well as those who smoke tobacco, imbibe excessive alcohol, or take steroid treatment, are at risk. Black women seem to be relatively immune. Fractures of the hip and other bones are even more frequent in elderly women, as is the attendant morbidity; and the mortality rate associated with hip fractures is up to 15%. Replacement of estrogen neither stimulates bone formation nor results in replacement of lost bone tissue, but does prevent further bone resorption in the post-menopausal woman. Well controlled studies also have suggested that estrogen therapy may reduce the incidence of both vertebral and long bone fractures.

Treatment is most effective when given before significant bone loss has occurred, and can delay bone loss for at least eight years; information on the effects of longer use is not available. When estrogen treatment is withdrawn, bone loss resumes. Prophylactic treatment for osteoporosis probably requires only small doses of estrogens, while higher doses to prevent further bone loss may be required in symptomatic women.

While there is general agreement that women who undergo premature menopause should receive replacement therapy until the age of 40 to 45 years,⁹ to retard the early onset of bone loss that would otherwise occur, prevention of osteoporosis is a less firm indication for post-menopausal estrogen treatment than the above indications. Many physicians give serious consideration to instituting prophylactic treatment in women whom they judge to

be at risk of the disease. The optimal duration of such treatment has not been determined, but is probably nine years at least.⁹ In all menopausal women adequate calcium intake should be assured and regular exercise encouraged.

4. *Other indications*

It has long been held that surgical menopause before age 40 required estrogen supplementation because of its protective effects against atherosclerosis as well as prevention of the above symptoms. This has recently been supported by a case control study of experience in American nurses.¹⁰

Estrogen therapy may also prevent atherosclerotic vascular complications in older post-menopausal women. It is well established that, until the menopause occurs, women are protected against the development of coronary artery disease manifestations. One hypothesis, in explanation of this finding is that this protection is lost when the high levels of circulating estrogen that typify the pre-menopausal state are reduced to levels found in men. Furthermore, estrogen administration has been shown to improve the serum high density lipoprotein (HDL) level which, according to current epidemiological data, is thought to be protective against atherogenesis.

A retrospective review of medical records in a Los Angeles retirement community has revealed by the case control method that the untreated menopausal woman suffers fatal myocardial infarction more often (2.3x) than her estrogen treated counterpart.¹¹

In men who had survived a myocardial infarction, there has been no demonstrable improvement in longevity from the administration of estrogen, but like the question of thrombophlebitis with the contraceptive pill, this is an entirely different issue than the primary prevention of arteriosclerotic heart disease in the estrogen deficient woman.

Psychogenic disturbances (eg, anxiety, nervousness, insomnia, fatigue) that are often associated with vasomotor flushes may be relieved by estrogen. For other psychogenic conditions requiring treatment, a drug more specific for the indication may be utilized (eg, anti-anxiety agent).

Estrogen therapy may also cause an improvement in emotional stability and tissue tone in some post-menopausal women; however, these are very difficult to measure for purposes of objective comparison.

Risks of Estrogen Therapy

1. Endometrial Cancer

The incidence of endometrial cancer in post-menopausal women not treated with estrogen is approximately 1 per 1,000 women per year. Three case studies have alleged that estrogen therapy is associated with a two to eightfold increase in the relative risk of developing endometrial cancer when conjugated estrogens were used in daily doses of 0.625 to 1.25 mg for two to four years. The risk of endometrial cancer seemed to decline after discontinuation of therapy. It seemed to be seen less in women with such predisposing factors as obesity and nulliparity. Most important, there is evidence to suggest that tumors arising from estrogen administration may be less "aggressive" than those otherwise encountered and under proper surveillance techniques, such early tumors may yield 5 year survival rates of 90% to 95%.

Case control studies are not always valid due to certain inherent difficulties encountered with such studies, in which a group of patients with endometrial cancer is compared with a group free of the disease as to their previous use of estrogen. There is no experimental control on other important unanticipated parameters that may correlate with the drug usage, the data is gleaned retrospectively, rates of patient refusal to cooperate may be high and the means used to select matching patients are often subject to challenge.

Each of these three studies has been objected to on one or another of these grounds and they do not agree with two earlier studies and one recent prospective study that found no relationship between the incidence of endometrial cancer and estrogen usage.¹² Furthermore, care was not taken to confirm the histologic diagnosis of malignancy and atypical hyperplasia.³

The observations are consistent, however, with data from experimental animals in which the frequency of carcinomas of the breast, cervix, vagina and liver are increased by the long-term administration of estrogenic substances. They are supported indirectly by the observation that relative risk increases with increasing dosage and duration of use, and by the fact that incident rates of endometrial cancer have increased in eight different re-

gions of the country in a fashion paralleling the increased use of estrogens nationwide in medical practice. However, the increased incidence of carcinoma was not accompanied by a corresponding increase in regional (or national) mortality from the disease. This may be because of earlier treatment of the disease, but again could be because the histological response of the endometrium to estrogen therapy may often represent a low-grade neoplastic process that is less than malignant.

The increased risk of endometrial cancer was associated primarily with conjugated estrogens, but this probably reflects the wider use of this estrogen form. All estrogens have the same intracellular mechanism for action and, until proven otherwise are presumed to have the same therapeutic and adverse effects. Cyclic estrogen therapy is thought to be less hazardous than continuous administration.

Evidence to support the addition of a progestin to the cyclic estrogen regimen is increasing. Women treated with an estrogen-progestin combination have a lower incidence of endometrial cancer than women treated with estrogen alone. The progestin should be administered for the last 7 to 10 days of estrogen treatment for maximum effectiveness. Withdrawal bleeding may occur with the cyclic regimen and may be reduced by lowering the dose of estrogen. Withdrawal bleeding can be expected to occur more commonly in the early menopausal years. The ability of progestin to decrease the incidence of endometrial cancer may be related to two mechanisms. First, progestin reduces the level of estrogen receptors in the endometrial cells. Second, progestin increases estradiol dehydrogenase activity in the endometrium, which eventually decreases the intracellular pool of estradiol.

2. *Abnormal uterine bleeding* is a common complication of estrogen administration and must be considered a disadvantage. Each time it occurs, the possibility of an underlying malignancy must be excluded by curettage of the endometrium. Downward adjustment of the dose of estrogen and cyclic use of a progestational agent may help to control such "break-through bleeding." Even in the absence of frequent bleeding an annual Pap smear, and some authorities feel an annual endometrial biopsy, should be done.²

3. Other Adverse Effects

Other more immediate complications, which

are common to the use of oral contraceptives, include an increased incidence of gallbladder disease; and, if higher doses than recommended for the menopause are used, thromboembolic disease, benign hepatic adenomas, hypertension and glucose intolerance. Estrogen use may stimulate fibroid growth, fluid retention, breast enlargement and have undesirable effects on several pre-existing disease processes.

There have been some attempts to identify a possible relationship between menopausal estrogen therapy and breast cancer. Both a slightly increased risk and a protective effect have been suggested by different studies. Evidence to date has failed to clearly identify any additional risk.

Estrogen Preparations

In the United States, the estrogen preparation most often used for replacement therapy is oral conjugated estrogens. However, any estrogenic preparation is effective and oral, topical and parenteral administration may be employed. No combined estrogen-progestin products in dosage sizes appropriate for replacement and no estriol preparations are marketed currently in the United States. Estriol has been suggested to be a safer estrogen that may be protective against breast cancer and does not stimulate the endometrium. Controlled studies are not available to support this contention.

It is probable that equivalent therapeutic doses of all estrogens have similar effects. At this time, no estrogen has been shown to be safer than any other. The route of administration and the relative potency of an estrogen preparation may affect dosage requirements and have effects on organ systems. For example, a lower total dose of estrogen may be effective when symptoms are due to vaginal atrophy only and a topical preparation is used. Topical estrogens are readily absorbed and also have systemic effects; therefore, they should not be used when there are contraindications to estrogen treatment. Oral preparations, which are absorbed and transported into the portal system, probably have more influence on hepatic function than parenteral estrogen forms. Parenteral and depot preparations provide a relatively constant stimulatory hormonal milieu.

Relative Risk Assessment

In deciding whether a woman having menopausal symptoms deserves estrogen therapy the physician must provide the information which can allow an informed decision. There is risk in using any drug, and this must be balanced against the risk of not using it. In this instance, one must balance the possibility of uterine bleeding, the desirability of annual endometrial cytologic or histologic evaluation and the dubious and remote hazard of uterine cancer at some later date against the nuisance and embarrassment of hot flashes, the compromise of vaginal secretions, the risk of myocardial infarction, and the risks of osteoporosis.

In the case-control studies relating endometrial cancer to two to four years' exposure to estrogen therapy, the risk of cancer fatality is of a lesser order of magnitude than that embraced by the habit of smoking one pack of cigarettes per day, assuming those studies are valid. The woman patient should also understand that those studies included larger doses of estrogen than are recommended today and that there are other reasons to doubt the precision of those estimates, so that the risk may be even less than this.

Estimates of benefit are even more difficult to assess with any precision; the control of hot flashes and of vaginal atrophy can be promised with some certainty, but the value of this must be a subjective judgment by the patient. The prevention of osteoporosis and hip or vertebral fracture may be the most important benefit from estrogen replacement, but in the absence of precise measurements of bone density and a large enough double-blind controlled study, estimates of this benefit remain quite imprecise. The protection against myocardial infarction has not yet been fully accepted, but must also be included on the benefit side of the equation. The other undesirable effects of treatment are largely temporary and will have their own impact upon the individual decision to take long-term replacement therapy.

The Council on Scientific Affairs recommends that the AMA support the following for the management of the menopause:

1. As with any form of drug treatment, estrogens should be utilized only for responsive indications, in the smallest effective dose, and for the shortest period that satisfies therapeutic need.

AMA Council on Scientific Affairs

2. Estrogens are effective in the treatment and/or prevention of vasomotor flushes, atrophic urogenital conditions, and probably osteoporosis, as noted above. Recent evidence supports a protective effect also against certain complications of arteriosclerotic heart disease.
3. Treatment is initiated with a low dose of oral estrogen. A topical preparation may be useful if atrophic vaginal symptoms are present.
4. Estrogen is administered cyclically to women with intact uteri to avoid continuous stimulation of the endometrium. Estrogen is administered for three out of four weeks (or 25 days of each month) and a progestin may be added to the regimen on the last 7 to 10 days of estrogen treatment.
5. Any abnormal unscheduled vaginal bleeding must be investigated promptly. Periodic (eg, 1-2 years) histologic sampling of the endometrium should be performed whether or not there is withdrawal bleeding. Yearly monitoring should also include breast and pelvic ex-

amination and measurement of blood pressure.

6. The only fully accepted contraindication to estrogen replacement therapy is the presence of an estrogen dependent neoplasm of the breast.
7. As in all therapeutic decisions the patient should participate in this decision to use estrogen replacement therapy after discussing with her physician the risks and benefits involved in her instance, and after experiencing the possible subjective benefits.

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OSMA Public Opinion Survey Assesses Attitudes On Issues In Medicine

Earlier this year the Oklahoma State Medical Association (OSMA) commissioned a public opinion survey to assess the attitudes of Oklahomans toward important issues in medicine. The survey was coordinated with a similar nationwide survey commissioned by the American Medical Association (AMA).

Both surveys (Oklahoma and US) were conducted by the independent research firm of Kane, Parsons & Associates, Inc, of New York City. The questionnaire used in the surveys was developed by Kane, Parsons & Associates in consultation with representatives of the AMA and OSMA.

The US data cited in this survey report were derived from 1,504 telephone interviews with randomly selected public respondents. The Oklahoma information base consists of 403 similarly conducted interviews. The interviews took place in August 1982.

Survey subjects included: selection and retention of personal physicians; adequacy of physician supply; public image of physicians; validity of professional liability claims; responsibility for rising health care costs; relationship between personal habits and health; and national priorities for spending.

The report that follows is based on results of the OSMA and AMA surveys.

Selection and Retention of Personal Physicians

The two most important factors influencing Oklahomans in choosing and retaining a physician are the physician's qualifications and training and the length of time a person must wait to get an appointment.

Nearly all respondents to the OSMA survey said qualifications and training were important, and 94% said waiting time for an appointment was important. About nine of ten respondents said the recommendation of friends and relatives was an important factor in their initial choice of a physician.

Treatment by the doctor's staff was considered by 94% of those asked to be an important reason for retaining a physician; 88% said their personal relationship with the doctor was an important reason for retention.

Compared with other factors, advertising and fee levels appear to be relatively unimportant to selection or retention. About two-thirds of Oklahomans surveyed said advertising was not important in choosing a physician, and about a third said fees were not important in either selecting or retaining a physician.

Oklahomans exhibit high similarity to their national counterparts in overall rankings of importance. Some interesting differences emerge, however, in the analysis of subgroups.

In the AMA's national study, for example, women showed a greater tendency than did men to rank recommendations and fee levels as important to initial physician choice. This pattern is absent in Oklahoma; in fact, men rank fees more highly than women. Elderly Oklahomans also were more likely than their national counterparts to rely on recommendations and fee levels in making their initial choice.

In both studies, the importance of advertising to choice of physician and the importance of fees to retention decrease sharply as education and income levels of respondents rise.

Survey

Adequacy of Physician Supply

A plurality of Oklahomans continues to believe that there is a physician shortage in the state.

Forty-six percent of those questioned in the OSMA survey said there are not enough physicians in their communities, while 45% said the number of doctors is about right. Only 5% said there are too many doctors in their communities.

The pattern in Oklahoma differs from that of the nation as a whole. Compared with their national counterparts, 8% more Oklahomans believe that there are not enough doctors, and 7% fewer view the current supply as about right.

In only two US Census regions do more respondents say there are not enough doctors than say the number is about right. These are the West South Central region, of which Oklahoma is a part, and the neighboring East South Central region. These two regions also have the lowest physician-to-population ratios in the country.

Public Image of Physicians

Physicians in Oklahoma get high marks from the public for accessibility, knowledge of medicine, dedication, and humility. But their ratings drop when it comes to doctors' fees, physician/patient interaction, and provision of medical care to the poor and elderly.

On the positive side, eight of ten Oklahomans surveyed agreed that their personal physicians are accessible in emergency situations and that most doctors are genuinely dedicated to helping people. Three-fourths of those surveyed agreed that doctors usually are up to date on the latest advances in medicine. Sixty-eight percent said doctors take a genuine interest in their patients, and only a third said they thought doctors behave as though they are better than other people.

On the negative side, however, slightly more than half thought doctors' fees are unreasonable, and 60% agreed that doctors are too interested in making money.

A substantial majority (65%) said people are beginning to lose faith in doctors.

As for the physician/patient relationship, Oklahomans indicated that there is room for improvement. Half thought that doctors do

not spend enough time with their patients or explain things well to them.

On the issue of medical care for the elderly, 54% of those surveyed agreed that the elderly are able to get needed medical care. However, 72% of Oklahomans aged 65 and over believed that the elderly receive adequate care, contradicting the view of the general public.

When asked about medical care for the needy, 47% of the general public said care is adequate. However, only 40% of those earning less than \$10,000 a year believed the poor receive adequate care.

When results of the Oklahoma and national surveys are compared, a similar pattern emerges. While slightly more of the Oklahoma respondents agreed that doctors' fees are reasonable, those aged 65 and over in the state expressed more negative views than did their national counterparts toward fees and doctors' interest in making money.

Questions about the physician/patient relationship issue also elicited somewhat more negative reactions from Oklahomans.

Ironically, when Oklahomans were asked another survey question concerning satisfaction with their last physician visit, they indicated very high satisfaction levels with all aspects of that visit. Ratings ranged from 83% satisfaction for office waiting time to 93% for the medical care received.

Ranked in between were the way the doctor explained things, treatment by the doctor's staff, and the time required to get an appointment.

Respondents to the national survey gave similar rankings, suggesting that the public image of physicians is shaped more by media exposure than by personal experience and that satisfaction levels are tied more closely to changes in physicians' practices.

Validity of Professional Liability Claims

Since the so-called "malpractice crisis" of the 1970s, the issue of physicians' professional liability has been less visible. However, there are signs that professional liability claims and judgments are again rising rapidly.

The statewide survey of public opinion asked Oklahomans a series of questions about malpractice claims and judgments. The same questions were asked of respondents to the national survey.

Responses to the Oklahoma survey showed that a strong plurality of Oklahomans (48%) believed that most people who sue physicians are looking for an easy way to make money. Nearly two-thirds of the state's elderly population agreed with this statement.

Half of those asked viewed current awards as too high, and two-thirds thought there should be a limit on the amounts awarded.

Compared with the general US population, Oklahomans have a more negative view toward increases in both the number of professional liability claims and the amounts awarded in such cases.

Responsibility for Rising Health Care Costs

Hospitals in Oklahoma are blamed by nearly two-thirds of the state's population as being primarily responsible for the rising costs of health care. But they are not the only culprits. About half the state's residents see insurance companies, drug companies, patients seeking unnecessary care, doctors, and government agencies as deserving "a lot" of responsibility for burgeoning costs.

The state survey showed that while the majority of Oklahomans (66%) believe cost to be the main problem facing health care today, opinion is fragmented in terms of assigning primary responsibility for the cost dilemma.

Besides those already named, other groups blamed by the public for increased costs include medical organizations, people with unhealthy personal habits, and unions. Four of ten Oklahomans said these groups deserve much of the responsibility.

When compared with the national sample, Oklahomans placed a greater share of responsibility for rising health care costs on:

- hospitals
- patients who seek unnecessary care
- insurance companies
- organized medicine
- government agencies, and
- unions

However, they assigned doctors less responsibility for the problem than did their national counterparts.

Given the opportunity to designate which groups deserve "not much" of the responsibility,

fewer than one in five Oklahomans said any group should escape blame. In the national survey, respondents were slightly more generous, but only by one or two percentage points.

Survey analysts warn that the public's confusion over the issue could give rise to "scapegoating," especially if the cost issue becomes more volatile politically. They point out that the public's perception of the health care cost issue is shaped almost totally by the media and that much of the "information" people get consists of charges and countercharges made by various groups as to who exactly is responsible for the cost "crisis."

Relationship Between Personal Habits and Health

When it comes to making a connection between personal habits and healthy living, Oklahomans appear to have a better grasp of that relationship than does the typical American.

But when it comes to changing unhealthy habits to conform with their beliefs, Oklahomans show about the same amount of self-discipline as their national counterparts.

When asked about the relationship between certain personal habits and health, roughly nine of ten Oklahomans surveyed agreed that the following practices are related to being healthy:

- reducing salt consumption
- exercising vigorously at least three times a week
- increasing the amount of fiber or bulk consumed
- refraining from smoking cigarettes or smoking only in moderate amounts
- maintaining a body weight that is neither too high nor too low
- consuming alcohol only in moderation

A smaller majority of respondents, about six in ten, believed that cutting down on fat, red meat, or dairy products is a healthy practice.

In every instance except one, Oklahomans were more aware of the effects these practices have on health than were respondents to the national survey.

The largest positive difference showed up in the question about smoking; Oklahomans

Survey

outscored their national counterparts by 7% (93% to 86%).

This difference is attributable to increased awareness among state residents with the lowest levels of education and income. These individuals traditionally are the hardest to reach through public education programs. However, the survey showed that about 95% of them believe smoking is unhealthy, compared with about 77% nationally.

The exception to the pattern arose with the question about consumption of fat, red meat, and dairy products. Compared with the national sample, slightly fewer Oklahomans acknowledged that eating less of these products was a healthy thing to do. The state's prominence in ranching and beef production may explain this difference.

Putting these beliefs about healthy habits into practice, however, presents a somewhat different picture.

More than one-third of state residents who know the habit to be healthy do not exercise regularly or increase the amount of fiber or bulk in their diets. And one in five who see the health connection have not:

- reduced consumption of fat/red meat/dairy products
- reduced salt consumption
- reduced or quit smoking
- maintained proper body weight

Finally, one in ten Oklahomans who know that excessive drinking is harmful have not reduced their alcohol consumption.

This pattern matches closely that of the national sample. Awareness levels are high, but improvements in health habits do not always follow.

In fact, the survey shows that in most cases, the number of Oklahomans who fail to follow a habit they know to be healthy far exceeds the number who are unaware of the health connection. In only two instances is the reverse true (reducing consumption of alcohol and fat/red meat/dairy products).

Combining these two groups shows that a substantial number of Oklahomans continue to lead unhealthy lifestyles. Forty to 50% of state residents are not cutting down on high-cholesterol products, not exercising regularly, and not including more fiber or bulk in their diets. And 25 percent have not quit

or cut down on smoking, kept a proper body weight, or reduced their consumption of alcohol.

Survey analysts say the Oklahoma results show that public health education programs have succeeded in making most people aware of the connection between personal habits and health. What is needed now, they add, is more emphasis on motivating people to change unhealthy habits and bring their behavior into line with their beliefs.

National Priorities For Spending

While the debate on national spending priorities continues to heat up in Washington, Oklahomans have expressed some definite opinions as to how they think the nation's budget pie ought to be sliced.

More than 60% of the OSMA survey respondents said society is not spending enough money on education. Twenty-nine percent said about the right amount is being spent, and only 7% said too much money is going to education.

Nearly half the population thought the amount spent on protecting the environment is insufficient, and four of ten indicated more should be spent on financial aid to the needy, health care, and public transportation.

With the exception of aid to the needy, fewer than one in five Oklahomans thought too much money is being spent on these areas. One in three believed spending on the needy to be excessive.

At the bottom of the list of spending priorities was national defense. Only a third of the respondents thought not enough is being spent on defense. Slightly more believed the right amount is being spent, and about a fourth said too much money is going to defense.

The nationwide AMA survey showed the same pattern of responses throughout the United States. But it also showed significant differences in strength of opinion on the issues in question.

Oklahomans felt more strongly than did the national sample about the lack of sufficient funding for education and less strongly about the need to spend more on health care, financial aid to the needy, and environmental protection. They also viewed increased defense spending more positively than did their national counterparts, though this item was lowest on the priority list for both groups.

Formaldehyde

Building-related illness due to exposure to formaldehyde is becoming a major public health concern. The Occupational Safety and Health Administration standard provides for a time-weighted average of three parts per million (ppm), based on a 40-hour work week. However, workplace standards cannot be used for the home environment which may contain young children, elderly persons, pregnant females, hypersensitive individuals, and people with other illnesses.

Formaldehyde-related illness may be characterized by one or more of the symptoms found in allergy patients. Other symptoms may include irritability, brief memory lapses, uncoordination, unexplained drowsiness, and asthma attacks.

The onset of symptoms may be associated with (a) moving in a new house or mobile home; (b) recent remodeling; (c) insulation with urea-formaldehyde foam; (d) purchase of furniture or carpeting, and (e) implementation of energy conservation measures.

Controlled animal studies have linked formaldehyde to changes in metabolism, acute respiratory disease, and various cancers. While there is no proof of human reactions from these studies, indications are that formaldehyde does



News From The Oklahoma State Department of Health

pose sufficient risk to humans. It has been established that as high as 10% of the US population may be hypersensitive to formaldehyde. Urea-formaldehyde foam insulation has been banned by the federal government for installation in homes and schools effective fall, 1982.

Control of formaldehyde levels may be complex and costly. Source removal or treatment may provide relief, or the number and types of sources involved may require that the patient move to another residence.

Requests for individual home surveys must be made by a physician, and the results will be sent to the physician for the patient's file. A fee of \$40, plus 22 cents per mile, will be charged to the physician.

For further information, please contact the Radiation and Special Hazards Service, Oklahoma State Department of Health, (405) 271-5221. □

COMMUNICABLE DISEASES IN OKLAHOMA FOR OCTOBER, 1982

DISEASE	OCTOBER	OCTOBER	SEPTEMBER	TOTAL TO DATE	
	1982	1981	1982	1982	1981
Amebiasis	—	3	1	11	24
Aseptic Meningitis	32	15	63	174	94
Brucellosis	2	1	1	7	7
Encephalitis, Infectious	4	3	13	36	22
Gonorrhea (Use Form ODH-228)	1267	1422	1517	13344	13313
Hepatitis A	85	26	67	627	252
Hepatitis B	30	27	40	293	194
Hepatitis Unspecified	38	16	23	232	128
Malaria	—	—	1	8	7
Measles (Rubeola)	3	1	6	30	6
Meningococcal Infections	3	4	—	27	40
Pertussis	—	—	—	5	2
Rabies (Animal)	13	16	13	172	199
Rocky Mountain Spotted Fever	4	2	3	75	99
Rubella	—	1	—	3	2
Salmonellosis	88	44	76	406	353
Shigellosis	68	60	48	350	377
Syphilis (Use Form ODH-228)	18	27	23	170	154
Tetanus	—	—	—	1	1
Tuberculosis	22	11	4	279	272
Tularemia	7	2	3	33	26
Typhoid Fever	1	—	—	3	5

AMA Heads National Program Aimed at Curbing Drug Abuse

As part of a national effort to prevent prescription drug abuse and diversion, the American Medical Association (AMA) is coordinating efforts to develop a model plan for determining the extent of drug diversion at the state level, the drugs involved, and the sources of those drugs.

Called Prescription Abuse Data Synthesis (PADS), the model plan is a project recommended by the Informal Steering Committee on Prescription Drug Abuse convened by the AMA in November 1981.

Federal statistics show that prescription drugs make up about 60% of the drugs mentioned during drug-related emergency room visits and about 70% of the drugs reported by medical examiners as causes of drug-related deaths.

While many of these drugs are channeled into illegal uses through diversion and theft at the wholesale level, or are illegally manufactured or imported, a significant amount is reaching the street through prescription dispensing.

According to Emanuel M. Steindler, MS, director of the AMA's Mental Health Program, several things must be accomplished in order to solve the prescription drug abuse problem.

"We must first learn the extent of the problem and which drugs are involved in each state," he said. "Second, we must be able to identify the 'poor' prescribers. Third, we must determine on a case-by-case basis why the *particular* physician is a 'poor' prescriber."

The PADS model will integrate existing federal, state, and local statistics into a format that can be used to make these assessments at the local level. Data that can be made available for use by states through the PADS model include:

- Automated Reports and Consolidated Orders System (ARCOS) — A record of every purchase of narcotic drugs and other drugs with high abuse potential by retail dispensers

- Drug Abuse Warning Network (DAWN) — A record of drug "mentions" from drug-related emergency room visits and drug-related deaths

- Theft of Controlled Substances — Statistics on drug thefts from pharmacies

- Medicaid Management Information System (MMIS) — State records of reimbursements for medical assistance services, including prescribed controlled substances, by provider and by recipient

- State Crime Laboratory Reports — Analyses of substances removed during drug arrests or investigations

- Drug Abuse Treatment Program Admissions — Local records of the primary drugs used by patients who have entered drug abuse treatment programs

- Law Enforcement Drug Arrests — Specific drugs cited in drug arrests by local law enforcement agencies.

The informal steering committee expects to complete the PADS model by early 1983 and will offer it, along with implementation assistance, to appropriate agencies in each state. □

Research Group Breaks Ground For Electron Microscopy Unit

The Oklahoma Medical Research Foundation (OMRF) has broken ground for a facility that will house the James H. Milligan Electron Microscopy Suites. Funding for the project has been provided by the Robert Glen Rapp Foundation.

The lower level of the Milligan Center will contain two electron microscopy suites that will house both a scanning and a transmission electron microscope.

The Omar B. Milligan Library will be housed on the second floor. The research library will be expanded in the new facility to meet the needs of the growing staff of research scientists.

The Milligan Center was designed by Garrett F. Miles, Architects and Planners, and will be built by Harmon Construction Company.

The OMRF is a non-profit, privately funded organization conducting research and treatment programs in cancer, cardiovascular diseases, arthritis, and related disorders. □

OU, VA Consultative Service Aids Ill and Aging Patients

As the number and proportion of elderly persons in the US population continue to increase each year, so does the incidence of chronic disease and impairment.

To combat the threat posed to the elderly by such impairment, the Department of Medicine at the University of Oklahoma Health Sciences Center and the Veterans Administration Medical Center established a consultative service for the chronically ill and aging.

According to John A. Mohr, MD, professor of medicine and director of the chronically ill and aging program, the service contributes to improvement in two areas — patient care and teaching.

The service is designed to provide comprehensive consultation for chronically ill and aging patients at University and Veterans hospitals and to function as an integral part of the training program for housestaff, students, and others involved in health care.

Dr Mohr noted that the primary objective of the service is to improve the quality of life for patients. Achievement of this objective involves a complete evaluation of the patient and development of an individualized written plan that includes three components:

1. medications
2. general health measures, including diet, sexual activity, exercise, and personal habits (smoking, drinking)
3. quality of life improvements achieved with the help of home resources, social services, physical and occupational therapy, or admission to a rehabilitation facility.

Teaching conferences are held on a regular basis to familiarize medical students, nurses, physicians, and other health care personnel with the pathophysiology of diseases in the chronically ill and aging person. The program also is offered as a monthly rotation to medical housestaff and students. The service thus functions in a manner similar to that used in the subspecialty services of medicine. □



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Oklahoma Team Implants Pump In Patient with Liver Disease

Oklahoma's first implantation of an infusion pump in a patient with liver disease took place in mid-November at Baptist Medical Center in Oklahoma City. The surgery was performed by a team that included Karl K. Boatman, MD, chairman of the Department of Surgery, D. H. Carmichael, MD, and Scott W. Calhoon, MD.

The Infusaid pump, which delivers a chemical therapy on a time-release basis, was implanted in a 63-year-old male patient. The device transmits concentrated quantities of drugs to specific areas of the liver, avoiding many of the side effects of conventional treatment.

The pump also delivers a dosage that is 100 to 400 times more concentrated than in conventional treatment.

In the past a number of Oklahomans traveled to Houston for similar procedures in which a catheter was implanted in the hepatic artery to deliver medication to the liver. With this procedure, however, the patient had to wear the pump externally, which greatly restricted physical activities.

The procedure was modified at the Univer-

sity of Michigan Medical Center to permit use of an internal pump. The pump is implanted in a pocket in front of the abdominal wall, and a catheter is inserted into the hepatic artery. Medications flow into a drug reservoir, where they are released directly to the liver.

After a hospital stay of one to two weeks, the patient may go home and resume a normal life, returning on an outpatient basis every two weeks to replenish the drugs. To decrease side effects, medications may be alternated with a saline solution every two weeks.

About 400 pumps have been implanted in patients nationwide, with up to 87% showing good response to the treatment. The majority of pumps are implanted in patients with hepatic tumors or malignancies such as primary liver cancer. Experiments are under way for insulin administration in diabetics, treatment of brain tumors, chronic pain management, anticoagulation therapy, and isolated tumor chemotherapy.

Dr Boatman believes the procedure has great potential. While not every patient will be a candidate for the implant, several are expected to undergo the procedure each year in Oklahoma. □

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Deaths

BERT F. KELTZ, MD 1904 - 1982

Bert F. Keltz, MD, well-known Oklahoma City internist, died November 30. A native of Iowa, Dr Keltz was graduated from the University of Iowa College of Medicine in 1928. He took his residency training at the University of Oklahoma Health Sciences Center where he later became Clinical Professor Emeritus. Dr Keltz was active in state and national medical organizations and held memberships in the American Board of International Medicine, American Society for Clinical Pharmacology and Therapeutics, American College of Physicians, American Diabetic Association and International Society of Internal Medicine. In 1981 the OSMA presented him with a Life Membership in recognition of his outstanding service to humanity.

WILLIAM M. WOOD, MD 1909-1982

Retired Muldrow general practitioner, William M. Wood, MD, died October 30, 1982 in Fort Smith, Arkansas. Born in Sandersville, Georgia, Dr Wood was graduated from the University of Colorado School of Medicine in 1935. He practiced in several Oklahoma towns before moving to Muldrow. He was a member of the Southern Medical Association and a Life Member of the OSMA.

HUGH C. GRAHAM, SR., MD 1896-1982

Hugh C. Graham, Sr., MD, retired Tulsa pediatrician, died November 11, 1982. A native of Fayetteville, North Carolina, Dr Graham moved to Tulsa in 1916. He was graduated from the Rush Medical College in 1926. He had served as past president of the Tulsa Board of Health and was a member of the Central States Pediatric Society and the Southern Medical Association. Among his survivors is his son, Hugh C. Graham, Jr., MD, Tulsa.

JOHN DAVID WILSON, MD 1930-1982

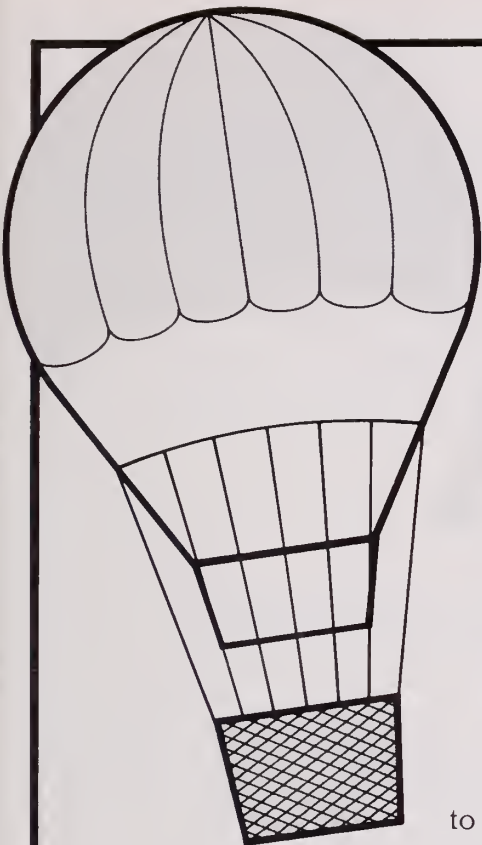
John David Wilson, MD, Oklahoma City psychiatrist, died November 11. Born in Lindsay, Dr Wilson was graduated from the University of Hamburg, Germany in 1967. He completed his internship at the University of Oklahoma Health Sciences Center in 1971. In 1973 his work was finished on a Masters Degree in Public Health. Before entering private practice, Dr Wilson took his residency training in psychiatry. For five years he was in private practice in Oklahoma City before joining the staff of the Central Oklahoma Community Mental Health Center in Norman. The past two years had been spent taking further training in Colorado. □

In Memoriam

1982

<i>Frances P. Newlin, MD</i>	<i>February 16</i>
<i>James T. Maddox, MD</i>	<i>February 21</i>
<i>Joseph F. Messenbaugh, MD</i>	<i>March 12</i>
<i>James Russell Kreger, MD</i>	<i>April 3</i>
<i>Boyd Vance Lucas, MD</i>	<i>April 9</i>
<i>Carlton E. Smith, MD</i>	<i>April 23</i>
<i>Ella H. Murray, MD</i>	<i>May 3</i>
<i>Loyd G. Williams, MD</i>	<i>May 15</i>
<i>A. A. Walker, MD</i>	<i>July</i>
<i>Wesley Russell Mote, MD</i>	<i>July 24</i>
<i>Thomas H. Fair, MD</i>	<i>August 15</i>
<i>Clyde E. Harris, MD</i>	<i>September 1</i>
<i>Tillman A. Ragan, MD</i>	<i>September 5</i>
<i>Floyd T. Hubbard, MD</i>	<i>September 23</i>
<i>William A. Eastland, MD</i>	<i>October 3</i>
<i>William J. Craig, MD</i>	<i>October 19</i>
<i>William M. Wood, MD</i>	<i>October 30</i>
<i>Hugh C. Graham, Sr., MD</i>	<i>November 11</i>
<i>John David Wilson, MD</i>	<i>November 11</i>
<i>Clinton Gallaher, MD</i>	<i>November 15</i>
<i>Bert F. Keltz, MD</i>	<i>November 30</i>

□



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OSMA Rebuts AP News Story On Opinion Survey Results

Several newspapers around the state carried an Associated Press story about the OSMA public opinion survey which failed to present a fair and accurate picture of the survey results. The following letter was sent to the editors of those papers. The *Tulsa Tribune* published it promptly, giving it a prominent place on the editorial page.

Editor:

The story you ran in your November 22 issue concerning the public opinion poll conducted by the Oklahoma State Medical Association distorted the overall results of the survey and contained several errors in fact. I would like to correct the misimpressions and the factual errors.

Your report omitted the portion of the survey in which Oklahomans gave their personal physicians a 91 percent overall satisfaction rating that took into account the medical care received, the way the doctor explained things, treatment by the doctor's staff, and appointment and office waiting time. When these findings are combined with the high marks given physicians for accessibility, dedication, medical knowledge, and humility, they present a much more positive image of the medical profession than that reflected in your report.

Certainly, the survey contained some negative findings on respondents' attitudes toward fees and physician/patient interaction. However, you failed to point out that negative responses to questions on these subjects edged out positive ones by relatively small margins (54 to 45 percent on fees, 50 to 49 percent on interaction). When physicians were highly rated, the responses were weighted much more heavily to the positive side (81 to 16 percent on accessibility, 63 to 35 percent on humility, 80 to 18 percent on dedication, and 74 to 23 percent on medical knowledge).

The factual errors I mentioned refer to statements about fees and medical care for the elderly. Your statement that "compared with surveys made nationwide, more Oklahomans complained of high fees than people in other states" is totally in error. In fact, the reverse is true; more Oklahomans agreed that doctors' fees are reasonable than did respondents to the national survey.

Likewise, your statement that "those over 65 were more critical of care for the elderly in the state" is in error. Seventy-two percent of Oklahomans aged 65 and over said the elderly are able to get needed medical care, while 54 percent of the general public believed this to be true. Results were the same nationwide,

making it apparent that the general public's perception is erroneous.

In all, you devoted only one paragraph in ten to the survey findings that were complimentary of the medical profession. It is this kind of irresponsible and uninformed reporting that harms not only the public image of physicians but also the reputations of those who hold themselves out as accurate and objective reporters of the news.

Anita H. Delaporte
Associate Director
Oklahoma State Medical Association

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Hospital Offers Accredited Smoking Cessation Program

A comprehensive smoking cessation program that qualifies for CME credit is now being offered by the Department of Behavioral and Occupational Health Services of Presbyterian Hospital in Oklahoma City.

The program consists of eight weekly sessions lasting two to three hours. The ultimate goal of the program is to help smokers become happy non-smokers. Treatment is intensive and deals with psychological, physiological, and social dependency.

The therapeutic process assists smokers in learning to understand the addiction to smoking and to develop new coping skills. It includes group support, stress management and relaxation training, gradual systematic withdrawal, and techniques for weight control.

Clinical psychologists serve as therapists for all groups. Follow-up is done on every patient who completes the program, and research is ongoing to examine program effectiveness.

Success rates to date are very high; 90% of participants become non-smokers after completing the eight-week program, and 64% remain non-smokers after one year. The program originated in Houston at the University of Texas School of Public Health in conjunction with the university's medical school.

Medical advisor to Presbyterian's program is Jerry Vannatta, MD, director of medical education at the hospital. For information on the program contact Dr D'Ann Whitehead, coordinator of behavioral services, at (405) 271-6515.

□

Book Reviews

Invisible Armies: The Impact of Disease on American History. By Howard H. Simpson. Indianapolis and New York: The Bobbs-Merrill Co., Inc., 1980. Pages 239, \$12.95.

It is intriguing to speculate on the final course of history if certain events had not interceded. In this book Dr Simpson, long interested in medical history, examines the effect of disease on certain aspects of American history.

He begins with a discussion of problems among the Indians and settlers in the New World resulting from smallpox and other epidemics. He points out that the importation of infectious disease to the Western world was by no means entirely the work of the explorers and the colonies, but that a portion must be attributed to the slave trade.

He then proceeds chronologically to discuss the reign of Great Britain throughout the world with particular emphasis on occurrences in North America. He proceeds through the French-Indian War and the Revolution. He considers the American retreat from Canada to be one of the grimmest episodes in the annals of American military history and that this retreat was due not to the enemy but to smallpox. Dr Simpson emphasizes the major role of malaria and its influence on military operations.

There is also a chapter on the role of yellow fever. Here Dr Simpson begins to bring in the role of individual physicians such as Dr Daniel Drake. He reminds us of the state of health in this country by the use of statistics. For example, in Boston between 1810-1820 the average age of all who died was 21.43 years and during the years 1840-1845 the average age at death in that city was only 27.85 years. The death rate in New York was about 25 per thousand and infant mortality ranged from 120 to 140 per thousand live births.

The chapter dealing with the Civil War provides little new information. He points out that the Civil War was fought in the years immediately before the microbiological cause of disease was identified, and reviews the ecology of certain epidemics.

One of the most interesting chapters is the one giving a description of advances in medicine that took place immediately after the Civil War.

This small book will be of interest to those concerned with medical history.

Harris D. Riley, Jr., MD

Doctor-To-Be: Coping with the Trials and Triumphs of Medical School. By James A. Knight, MD. New York: Appleton-Century-Crofts, 1981. Pages 269. Price \$6.95.

Dr James A. Knight is well-equipped to write such a book. He has long been on the front line in medical education as a dean, director of admissions, a psychiatrist, and a well-regarded faculty member. The book pulls together in one place a tremendous amount of valuable information. It covers the process from the decision to become a physician, through the schools' selection process to the medical school experience itself. It is made up of some fifteen chapters. These include chapters devoted to the adjustment in medical school including psychological problems of medical students, the student's relationship with the faculty, the personal struggles and accomplishments of students, and related matters. Knight also discusses minority, disadvantaged and women students and medical ethics. There is also a chapter on specialty choice in medicine and one on death.

The author's warm and understanding approach and his very substantial experience in working with students show clearly. The writing is clear and is particularly good when Dr Knight provides his own opinion about a particular issue. Some premedical and medical school advisors will disagree with the recommendation that the premedical student should gain experience by working in hospitals in that it may prevent his developing other interests.

Each chapter has well-selected, excellent references. Perhaps the only criticism I have of this book is that some of the references contain citation errors and its little attention to osteopathic physicians. It is an excellent up-date to his *Medical Student: Doctor in the Making*, (1973).

All in all this is an excellent book which will be of interest to medical students and their teachers, to husbands and wives of students and to premedical students. I highly recommend it.

Harris D. Riley, Jr., MD

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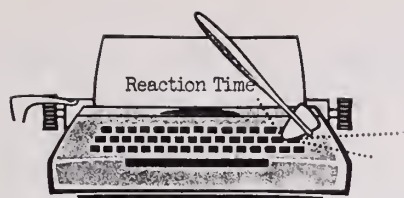
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Dear Dr Johnson:

The article in the September *Journal* by Teresa Thom does not present an objective or comprehensive viewpoint of either Eastern or Western medicine, nor even of the historical facts.

The attempt of the Rockefeller Foundation at Peking Union Medical College was to reinforce the biological basis of medical care in medical education in a society where many treatments were still empiric. There was no "health care system" introduced during this highly successful effort. Truly, the big city hospitals in China and Chinese medical graduates were equal to any in the world, further testimony to the success of the project and the ability of the Chinese.

Just because most Chinese did not live in the big cities does not mean that even rural Chinese would not benefit from such national care resources. Building a primary care and rural network throughout China could have been developed during the Revolution without destroying the medical schools, specialty training programs, research laboratories, medical libraries, etc. It is evident now that the Chinese must rebuild the very resources which the revolutionaries destroyed. It will take a generation to do that. Millions of Chinese will not have these resources during their lifetimes.

The "barefoot" doctor has a grammar school education with six months of technical education in sanitation, nutrition, birth control, prevention and treatment of common illnesses. There has been tremendous improvement in the general nutrition of the Chinese, and population control is effective. Venereal diseases have practically been eradicated. These accomplishments are almost all in the domain of public health and preventative medicine, the rightful domain for public policy and government responsibility. On the other hand, it is this same cadre of unscientific health workers who have introduced pork as the main protein in the Chinese diet and cigarette smoking as beneficial to the lungs. This has tripled the in-

cidence of cardiovascular and pulmonary diseases in China in the last 30 years.

Curative medicine is much more dependent upon the sciences of physiology, biochemistry and pharmacology. It is essential that physicians who practice in this spectrum of health care have the scientific background to do so.

Acupuncture may be effective in dealing with some pain syndromes, psychosomatic problems and for anesthesia for operations on the body surface. It is not desired for surgery inside the chest or abdominal cavities even by Chinese surgeons. When used for these conditions, it is because of the lack of adequately trained anesthesia personnel, or because of government pressure. Ms Thom states that "an American Medical Association research lab discovered . . . Endorphin . . ." The AMA does not run any research labs! Rather than stating that it works, it is more accurate from my observation to say that it is *endured* because there is no alternative for the patients in rural areas.

The American physician is well aware of herbal medicine as the forerunner of pharmacologic treatment as is exemplified by digitalis, curare and quinine. These drugs are still in use, but in a quantifiable form with predictable outcomes. The section on "Modernizing the System: brought back memories of human experimentation reminiscent of Hitler's Germany, or a Siberian prison. Such cavalier experimentations on human subjects is not ethically acceptable in our society.

The doctors reflect the same attitudes reflected by others in Chinese society, that of resignation to their "lot in life." Expression of anything else brings about severe reprimand or more inhumane measures. For the generation under 38 years of age, they have never known anything else by which to compare their experiences. Comparison can only be made when there are alternatives.

The report reflects the depth of a tourist's view. Occidental visitors often are shown only what Chinese politicians want them to see. I agree that American physicians, as well as journalists and other professions, have much to learn from the Chinese. I would enumerate: patience, acceptance of the unchangeable, courtesy, dedication to their profession, humility and a desire for every person to have good health care. These characteristics have much to do with the art and politics of, but very little to do with the science of medicine. There are many blends and variations on the former, but

no acceptable substitutes for the latter.

Perhaps, Ms Thom and I could agree that both of us would prefer our personal medical care to be directed by the best scientifically educated physician in a caring, supportive environment of health care professionals, preferably in a modern, technologically advanced health care facility. These conditions are most likely to be met in the United States and, ironically, are available in almost every medium-sized town.

This letter is written primarily because her article subtly glorifies the socialist Revolution and a march back into the eighteenth century. Scientific advancement, public policy on health care delivery and increasing of human values in health care delivery are all mutually compatible as has been demonstrated in the West by many, and by the Japanese in the East.

Thank You.

Sincerely yours,

Jasper L. McPhail, MD

□

New Medical Update Brochure Gives Advice on Frostbite

A new Medical Update brochure, titled "Frostbite: Winter's Chilling Threat," is now available to OSMA members at no charge. It discusses frostbite symptoms and gives advice on prevention and treatment of cold-related injury.

This brochure is intended as the seasonal replacement for the current brochure on health hazards of overexposure to the sun.

The Medical Update series is provided to member physicians for distribution to their patients. Other brochures in the series include guides to sensible dieting and compliance in taking medications.

To order the Medical Updates, write to OSMA headquarters, 601 NW Expressway, Oklahoma City, OK 73118, or telephone (405) 843-9571. A display placard for the brochures is available upon request. □

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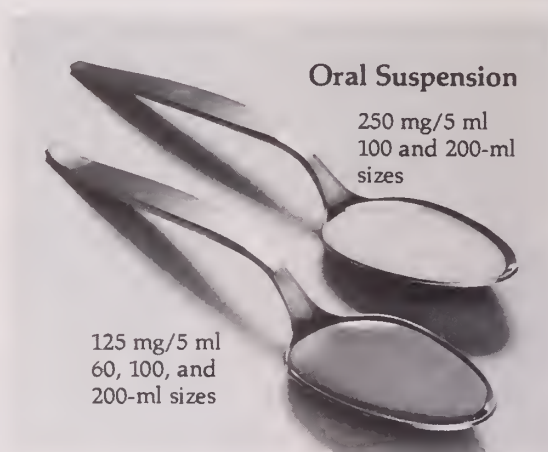
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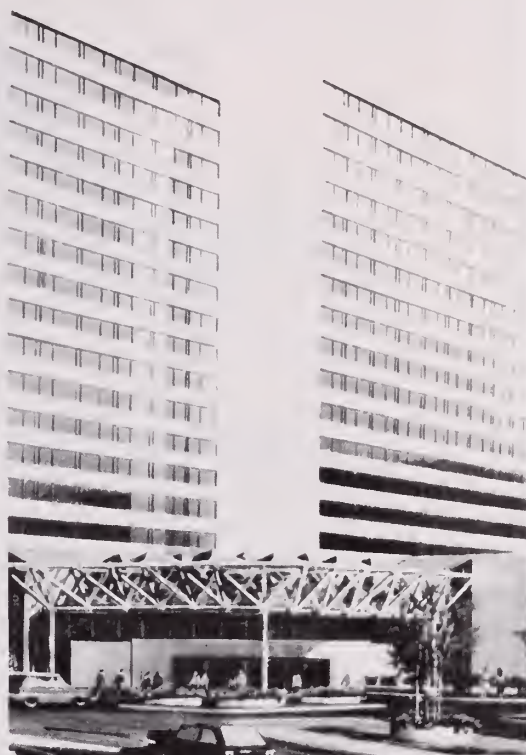
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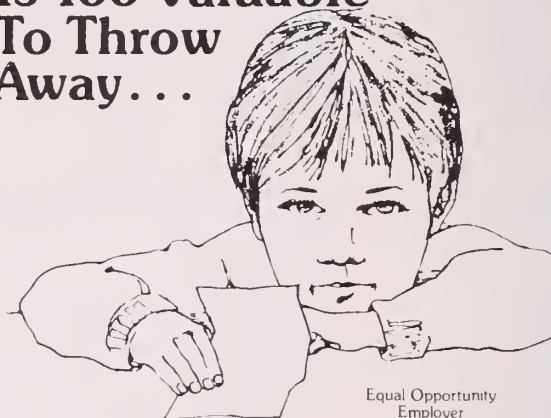
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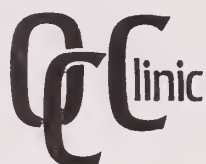
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Index to Advertisers

American-Medi Lease	inside front cover
The Arthritis Clinic	xxii
Boyle & Company Pharmaceuticals	xi
The Chickasha Clinic	xxii
City of Faith	i
Country View	xviii
C. L. Frates & Co.	21
Glass-Nelson Clinic	xxiii
Harsha Orthopedic, Inc.	xxix
Eli Lilly and Company	xiv
The McAlester Clinic	xxiii
McNeil Laboratories	vi, vii
Medical Arts Clinic of Ardmore	xxiv
Oklahoma Allergy Clinic	xxiv
Oklahoma City Clinic	xx
Oklahoma Hand Surgery Center, Inc.	xxvi
Oklahoma Plastic & Reconstructive Surgeons, Inc.	xxvi
Oklahoma Cardiovascular & Thoracic Surgery Associates, Inc.	xix
Orthopedic & Arthritis Center	xxv
OSMA Group Life Insurance Trust	iv
Pension Consultants, Inc.	19
Plastic & Reconstructive Surgery Clinic, Inc.	xxvi
PLICO	27
Raphael Center Hospital	xviii
Roche Laboratories	back covers, viii, ix, x, xii, xiii, xv, xvi
Shawnee Medical Center Clinic, Inc.	xxv
Staff Leasing, Inc.	ii
Timberlawn Psychiatric Hospital	xvii
Tulsa Adjustment Bureau, Inc.	20
The Upjohn Company	v
Willow View Hospital	xxi

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of the Oklahoma State Medical Association

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NEWS

Members of the Oklahoma State Medical Association, the constituent societies of the association, and all readers in general are invited to supply news items of general interest to the profession.

ADVERTISING

All advertising copy must be approved by the Editorial Board before acceptance for publication. General and miscellaneous advertising rates will be sent on request.

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The Editorial Board reserves the prerogative to submit contributions to a Medical Editing Service when warranted. If such is felt necessary, the Editor will contact the author for approval, informing him that there will be a modest charge for this service.

REPRINTS

Authors will receive reprint order forms from the Transcript Press, P.O. Drawer 1058, Norman, Oklahoma 73070, prior to final publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

BACK ISSUES

Microfilm copies of back issues of *The Journal* may now be purchased from University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

Legislation: It's Up To You

The above title is the new logo for the AMA Auxiliary Legislation Committee. It is also the title of a report on the activities of the AMA Auxiliary Legislation Committee and will be sent to all state legislative chairmen and other national and state leaders. This newsletter will serve as a vehicle for sharing information regarding the legislative activities of individual states.

Think about it, what could be a more appropriate slogan to appeal to our sense of responsibility? As parents we instill accountability in our children when we stress, "Only you are responsible for your actions." President Truman had a well known slogan sitting on his desk for everyone to read, "The buck stops here;" yet another way to say, IT'S UP TO YOU.

When we apply this to other aspects of our life it includes participating in our own medical auxiliary and its projects, one of which is legislative action. Recently, a state legislative workshop was held to acquaint us with the working of state government and inform us as to how we might affect better health legislation. We learned that the coming years will have much medically oriented legislation that will drastically affect the delivery of health care to all the citizens of our state. It was suggested that we need to help educate the community in how to intervene in meaningful ways.

Expressing an interest by writing letters, asking questions and making telephone calls will "drive legislators crazy," says Dr Bill Hughes, Chairman of the State Legislative Committee.

According to Dr Hughes, legislators count on apathy, and informed constituents are alarm-

ing, because lawmakers tend to think no one cares what they do. If *three* letters are received from a district on a bill, it is labeled as "*many* people are interested." On the other hand, *twelve* inquiries constitutes a "*ground swell* of opinion." So you see, once again, IT'S UP TO YOU.

"Women tend to be much more social creatures than men," further stated Dr Hughes. As such, we are more in touch with all that goes on in our community and have a broader perspective about public affairs.

"Men have a gun-barrel point of view," he said, "but if women really want to form their husband's point of view they can."

In order to help mold opinion, however, we must be better informed and aware, so once again your state medical auxiliary is going to offer you the opportunity. This will be your chance to enlighten yourselves regarding the current legislation being acted on in our state.

This year we will participate in "Health Care Legislation Day." Targeted for February 15 or 16, 1983 (we'll let you know exactly later), we'll meet at the state capitol and then break into smaller groups, each with a leader, and allow you to sit in on actual committee hearing on health legislation. Following this, will be a brief time for auxiliaries to meet their district legislators and ask questions and then have a sit-down luncheon. For those who choose to, time will be allotted to go into the House and Senate and watch the floor debates.

This promises to be an interesting, rewarding day and will give you an opportunity to further educate yourself on the politics shaping our state.

Come, get involved, IT'S UP TO YOU . . . INVOLVEMENT REALLY DOES TIP THE SCALES.

The American Academy of Otolaryngology — Head and Neck Surgery, Inc, has elected Robert J. Keim, MD, Oklahoma City, as secretary of the board of governors. Dr Keim is the current secretary of the American Neurotology Society. Jack V. Hough, MD, Oklahoma City, was elected to a three-year term on the academy's audit committee. Dr Hough currently serves as president of the American Otolological Society.

A nationwide toll-free hot line has been established by the US Department of Health and Human Services (HHS) to gather information about fraud, waste, and abuse in the department's 350 programs, including Medicare and Medicaid. The number is 1-800-368-5779. Operators in the inspector general's office will answer. As a pilot for the national hot line, HHS set up a local Washington number two years ago. More than 5,900 federal workers and taxpayers have used the local number to report fraud and abuse. About 10% of the complaints resulted in remedial action.

George Dellaportas, MD, former chairman of the Department of Preventive Medicine and Community Health, University of Illinois College of Medicine, is the new director of the Oklahoma City-County Health Department. His appointment became effective January 1.

A study funded by the National Institute of Child Health and Human Development indicates that 45% of all premarital teenage pregnancies occur in the first six months of sexual activity. More than a third occur in the first three months alone. The study also showed

that younger adolescents are less likely than older teenagers to use contraceptives during their first sexual experience. The findings indicate that education about contraception methods should take place before teenagers become sexually active.

Jean Pitts, MD, Oklahoma City, was honored as a 1982 Byliner by the Oklahoma City chapter of Women in Communications, Inc. Byliner awards are made to women selected for making significant contributions in their field of endeavor.

Two Oklahoma physicians have been elected to fellowship by the American College of Physicians. They are Charles K. Holland, MD, McAlester, and Khader K. Hussein, MD, Oklahoma City. Election to fellowship signifies that a physician has been recognized by colleagues as having attained a high level of scholarship and achievement in internal medicine.

The Flying Physicians Association will hold its 29th annual meeting June 19-24, 1983, at Jackson Lake Lodge in Grand Teton National Park, Wyoming. Seymour Polk, MD, chairman of the association's Scientific Program Committee, has issued a call for scientific papers. Physicians interested in submitting a paper should contact Dr Polk at 777 Pollard Road, #5, Los Gatos, California 95030. The Flying Physicians Association, founded in 1954, is open to all physicians who hold a valid pilot's license. For information about the association and the annual meeting, contact Albert Carriere, Business Counsel, Flying Physicians Association, 801 Green Bay Road, Lake Bluff, Illinois 60044. □

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sleep laboratory in the investigation of sleep and sleep disturbances. Scientific exhibit at the 124th annual meeting of the American Psychiatric Association, Washington, DC, May 3-7, 1971. 12. Pollak CP, McGregor PA, Weitzman ED: The effects of flurazepam on daytime sleep after acute sleep-wake cycle reversal. Presented at the 15th annual meeting of the Association for Psychophysiological Study of Sleep, Edinburgh, Scotland, June 30-July 4, 1975. 13. Data on file, Hoffmann-La Roche Inc., Nutley, NJ.

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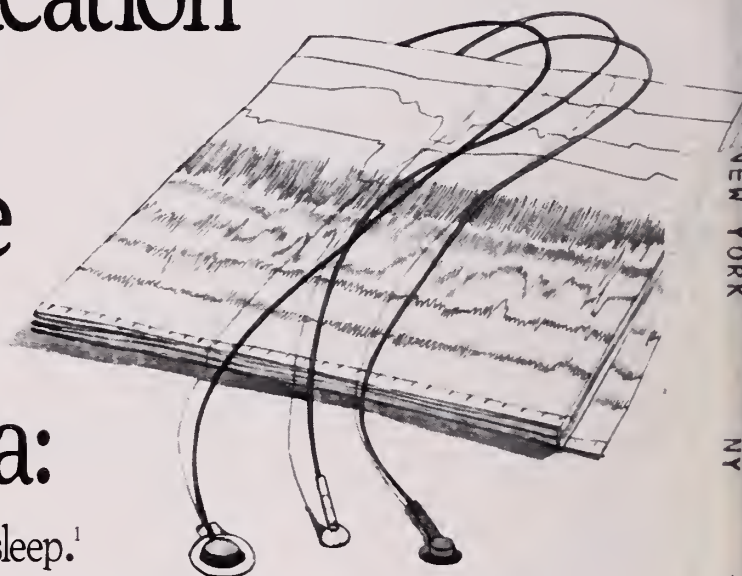
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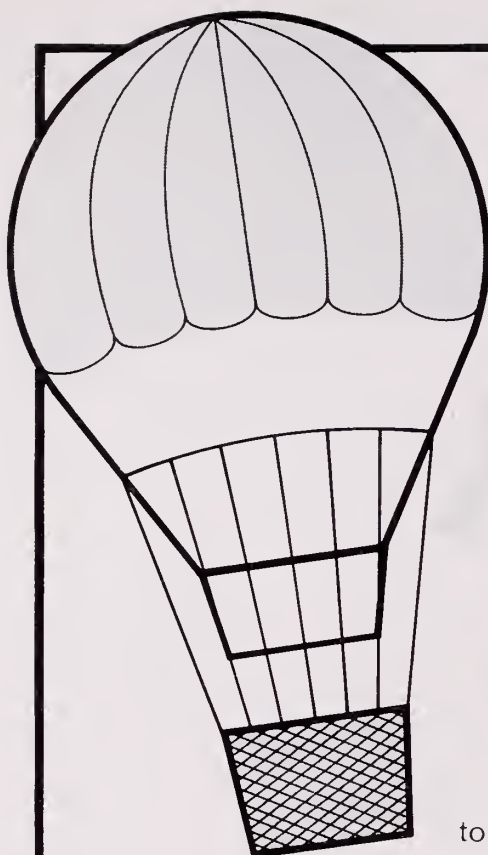


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Oklahoma State Medical Association

FEBRUARY, 1983

Vol. 76, No. 2

CONTENTS

29	Rising Costs and Competition
30	President's Page
31	The History of Histoplasmosis, <i>Harris D. Riley, Jr., MD</i>
41	Impotence: A Surgically Manageable Disease, <i>Johnny B. Roy, MD</i>
45	Cushing's Syndrome from an ACTH-Secreting Pheochromocytoma, <i>Vincent Fiorica, MD, James L. Males, MD, David C. Kem, MD, Lawrence E. DeBault, PhD and Fay M. Knickerbocker, MD</i>
51	News From The Oklahoma State Department of Health
53	Technological Advances Make 1982 Notable Year in Medicine
53	ASIM Program Seeks to Help Unemployed Get Medical Care
54	Trustees Elect 18 Physicians As Association Life Mem- bers
54	Doctoral Students Requested To Apply for Research Grants
57	Deaths
57	In Memoriam
58	Black Lung Program Urges Doctors to Take Assignments
59	Book Reviews
vii	Miscellaneous Advertisements
xxx	Index to Advertisers
xxxi	Auxiliary
xxxii	The Last Word

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All resolutions to be presented to the Oklahoma State Medical Association House of Delegates annual meeting must be received in the executive office no later than thirty (30) days prior to the meeting. This year's meeting will be held May 4-7, 1983 at the Excelsior Hotel, Tulsa, Oklahoma.

County medical societies or individuals wishing to submit resolutions should mail them to OSMA, 601 NW Expressway, Oklahoma City, OK 73118. Should you need assistance in drafting such resolutions, please contact the executive offices.

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Rising Costs and Competition

Ever since the time some insurance company talked us into packaging surgical procedures with labels and uniform price tags, the practice of medicine has been viewed as an industry and physicians have been treated as merchants. Of course, this metamorphosis did not come about abruptly. A half-century elapsed between the seduction and the prostitution.

Because we now sell commodities rather than render services, our business is conducted in the marketplace where all merchants work. Unfortunately for our society and our one-time profession, the traditional regulatory effects of supply and demand, advertising and competition do not prevail. In fact, they appear to yield antithetical results.

Some years ago, in response to diverse pressures, the nation's medical colleges expanded their existing facilities, assisted the development of new colleges and began to increase enrollments. At the same time, other methods were designed to increase the availability of professional medical care: physician assistant and nurse practitioner training programs were developed. Legislative endorsements followed with laws which expanded their roles. Foreign-trained physicians were encouraged to immigrate and licensing boards created special provisions to accommodate their employment. Laws which limited and defined the practices of non-physician practitioners of the healing arts were re-written or discarded. Tax revenues and other public funds were pumped into a hodge-podge of financial assistance programs designed to increase the numbers of health care curriculums, students and graduates.

The effectiveness of these efforts in increasing the availability of some kind of health care has been impressive. Already there are surpluses of physicians in certain specialty categories in a growing list of communities.

So why has the cost of medical care not come down? There's plenty of competition. The Federal Trade Commission has usurped our right to define ethical conduct and has virtually forced us to advertise. So why haven't prices

come down? The explanation is simple. Medical care is not a commodity and professional services are not merchandise.

No one ever is likely to put his health in the hands of a particular physician just because of his low fees. Human beings have no generic equivalents and no bureaucratic manipulation will create them.

And if advertising will lower prices, why is it that brand-name aspirin tablets can be sold for ten times the price of their generically identical twins? No bureaucratic manipulation will reverse the influence or consequences of advertising.

Increasing the number of physicians will make medical care more accessible, but it also will make it cost more rather than less. Every physician in private practice must pay rent, salaries, taxes and rapidly rising insurance premiums. If he sees 100 patients a day he can and almost certainly will charge a lower per-patient fee than he could if he were seeing only ten patients a day. Beyond this obvious and simple fact, there are many implications of considerable importance for the patients of both the over-patronized and under-patronized physician. Suffice it to say here, there is an ideal level of utilization for every physician in general or specialty practice. Go in either direction from this ideal and both costs and quality suffer serious dislocations. Bureaucratic manipulations will not invalidate these facts.

So in spite of all the efforts to treat physicians as merchants and medical care as merchandise, nothing will change. An increase in the number of physicians will force fees upward, as will an increase in the levels of competition. Forcing physicians to advertise also will force fees upward and will not cause physicians to lower their fees in order to attract more patients. Fees will never become a major factor in the selection of a physician.

What is worse, these sorry efforts to manipulate the cost of medical care will result in a decrease in the quality of that care so that soon, perhaps, we will provide the most available, most expensive, most ineffective non-professional medical care in the world. —MRJ

The House of Delegates of the American Medical Association met in Interim Session at Miami, Florida December 5-8. The delegates demonstrated succinct, mature, and intelligent consideration of the many thorny issues presented, a mode of action not always evident in past sessions. The Oklahoma delegation was present in its entirety, and its presence was a deciding factor in many of the floor debates and in reference committee testimony throughout the meeting.



Among the issues passed by the house, some initiated by the Oklahoma Delegation and others actively supported by it, were the following:

- The AMA is to petition Congress and the secretary of health and human services to take an extremely cautious approach to diagnostic related groups (DRGs); the AMA is to study the many problems raised by the DRG prospective reimbursement system: the reimbursement formulas are to be expanded beyond the DRG concept and be implemented in selected areas before it is imposed nationally.
- Approved a resolution opposing provisions of the new Tax Equity and Fiscal Responsibility act affecting physician reimbursement.
- Establishment of a new AMA Section on Hospital Medical Staffs.
- Expansion of the AMA's role in helping physicians and medical societies assume a leadership role in peer review.
- Reaffirm support for specialty society representation in the House of Delegates.
- Approved standards for state medical societies to follow in accrediting local CME programs.
- Approved continuation and expansion of the Health Policy Agenda for the American People.

It has been my privilege over the years to have attended ten meetings of the AMA House of Delegates. With each session, my comprehension of this mode of democratic consideration of the many complex, onerous, and important problems faced head-on by this body has increased greatly, and my admiration for the final decisions of the house has also increased. Certainly my agreement with all its decisions is not forthcoming, but to reach even a semblance of consensus on many of the problems is in itself a tremendous feat. Our delegation should be congratulated on their dedication and enthusiastic approach to the work of the house. They do their homework, they are interested, they attend all the meetings (including 6:30 AM caucus sessions), they persuade other state delegations to their point of view, they are well known among the delegates from other states, their views and opinions are held in high esteem by other delegates and truly represent the attitudes and principles of the Oklahoma State Medical Association. Individually and collectively, I am proud of our delegation, and congratulate them all on a job well and enthusiastically done. All OSMA members should join me in thanks and appreciation to AMA Delegates Ed Calhoon, Joe Crosthwait, Perry Lambird, and Harlan Thomas and to Alternate Delegates Jim Eskridge, Bill Leebron, Vic Robards and Orange Welborn. Thanks to all of you for an outstanding performance!

John A. Montoya MD

The History of Histoplasmosis

HARRIS D. RILEY, JR., MD

Histoplasmosis, formerly thought to be a rare, tropical, usually fatal infection, is now known to be a relatively common disease with many different clinical expressions. This article describes the evolution of knowledge of this interesting and protean disorder.

Histoplasmosis, caused by the dimorphic fungus *Histoplasma capsulatum*, is the most common systemic fungus infection in the United States. It is a pleomorphic, granulomatous disease with a wide variety of manifestations that may occur in acute, subacute, or chronic forms, tending in many ways to simulate tuberculosis and often being confused with that infection. It is seen most frequently in the mid-portion of the United States in the area defined as the Mississippi Valley.¹⁻⁴ Infections vary greatly from relatively inapparent

asymptomatic parasitization to overwhelming infection that can be rapidly fatal.¹ About 50% of patients are asymptomatic and less than 1% have generalized fatal dissemination.²

Until recent years, histoplasmosis was regarded as a rare disease of mysterious origin, which invariably progressed to a fatal outcome. It is now recognized as a relatively common, benign (often clinically inapparent) or moderately severe disease. The disease is still poorly understood by many, and variations in its spectrum often are mistaken, overlooked, or misdiagnosed as other disease processes.^{3, 3a}

Infection with *Histoplasma capsulatum* is startlingly prevalent. A recent estimate holds that perhaps 40 million persons in this country are infected and that as many as 500,000 new infections develop each year.^{2, 4} Of the major systemic fungal infections in the United States, histoplasmosis causes the greatest number of deaths, according to the Public Health Service.⁴

Knowledge of histoplasmosis has accumulated rapidly and in a relatively short time; the disease was unknown before 1906. Since that time the etiologic agent has been identified, the pathogenesis established, the clinical picture defined, useful diagnostic tests established, and the epidemiology elucidated.⁵

From the Department of Pediatrics and the Children's Memorial Hospital, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma.



Fig 1. Samuel Taylor Darling, MD, taken about 1910. From *Histoplasmosis*, Springfield, Illinois: Chas. C. Thomas Publisher, 1960. Reproduced with permission of author and publisher.

The complete picture, however, has not been finalized.

Disease Is Recognized

Histoplasmosis was first seen and named in Panama in 1905 by Dr Samuel Taylor Darling (Fig 1), a US Army pathologist. Probably because he was searching for leishmaniasis, he observed what he thought were protozoan bodies in autopsy material in a case seen at the Ancon Hospital. (Fig 2).⁶

The case that Darling described was that of a Negro from Martinique who exhibited unexplained fever and at autopsy showed generalized involvement by the disease with hepatosplenomegaly and anemia.⁶ Darling believed that what he observed was quite similar to the findings of Leishman⁷ and Donovan⁸ and assumed, therefore, that what he observed was

a protozoan disease. He named this organism *Histoplasma capsulatum* because he found it in histiocytes, believed it was a plasmodia-like protozoan, and believed it to be encapsulated. His first two papers describing the disease,^{6,9} and the inclusive drawings, were quite accurate. A later publication from the Rockefeller Institute in New York contained excellent photomicrographs.¹⁰

The following year Darling observed two more fatal cases⁹ in a hospital which did not encounter another case for nearly 50 years.*

Also in 1906, Richard P. Strong described organisms while working in the Philippines which resembled *H. capsulatum*. However, he later expressed the belief that the organisms which he saw and described were *H. farciminosum*.¹¹

Henrique da Rocha-Lima, a Brazilian who spent 19 years in the Institute for Tropical Diseases in Hamburg, Germany, reported in 1912 that the organism described by Darling showed a greater similarity to yeast than to protozoa.¹² This was the first suggestion that the organism seen by Darling might be a fungus. Da Rocha-Lima also pointed out that the flagellate cell forms described by Darling were probably errors of observation.⁵

In October 1924, Dr Henry E. Meleney visited Darling, who was then in charge of the Malaria Experimental Station of the Rockefeller Foundation at Leesburg, Georgia. Meleney showed him sections of visceral leishmaniasis in Chinese hamsters, and Darling called attention to the similarity of this infection to histoplasmosis. This proved to be the first of a series of events that ultimately led to the isolation of *H. capsulatum* and its identification in a living human being.¹¹

Darling's Findings Confirmed

In 1926, Drs William A. Riley and Cecil J. Watson reported the autopsy findings in a case of disseminated histoplasmosis originating in a resident of Minnesota.⁵¹ This was the first well-documented case since Darling's three were reported and the first case recognized in the United States. A case seen in Europe had been described as histoplasmosis in 1924-25, but the documentation was not convincing.¹¹ The case described by Riley and Watson involved a woman with disseminated disease

* Peabody, J. W., Jr. Histoplasmosis: Unraveling the Panamanian puzzle. *New Eng. J. Med.* 255: 408, 1956.

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Fig 2. Dr Darling's handwritten record of autopsy findings in the first reported case of histoplasmosis (Autopsy record #252 dated December 5, 1905.) Darling's bold pen strokes and over half a century have fragmented the paper making portions of the record illegible. (a) Contains "clinical notes" and the beginning description of necropsy findings which

are continued in (b). In (c), under "Pathological diagnosis," the listings "Acute military tuberculosis, pulmonic type," "Tuberculous lymphadenitis," and others can be identified. In addition, the words "Histoplasmosis" and "Histoplasma capsulatum" can be seen. Reproduced with permission of Enrique Chaves, MD.

their intense refractivity and droplets of dye, they could be demonstrated in fixed films in which they had been overlooked previously Dr Meleney once showed me one of those sections [of a case of histoplasmosis] just because of my interest in the reticuloendothelial system in general. That picture came back to my memory as I puzzled about the parasites that filled the circulating monocytes of the infant under study. Fortunately Dr Meleney was available [to identify the organism]. Dr Goodpasture* corroborated the likelihood that the parasites invading the monocytes were the same as those in the histiocytes of the cases of Dr Darling. This was the first time that the organism had been found before death, and the stage was thus set for adequate culturing of fresh material. It is due to Dr DeMonbreun's thoroughness, patience and skill that the identification of the invading organism was brought to light.

Meleney's 1924 visit with Darling gave him the opportunity to study the histologic characteristics of histoplasmosis from Darling's original material. Several years later Meleney, then at Vanderbilt University School of Medicine, demonstrated a tissue section containing *H. capsulatum* to Dr Edna H. Tompkins, an anatomist who was studying supravital staining of blood cells at Vanderbilt. This casual exchange of information proved highly significant, for in 1932 Dr Katharine Dodd¹³ asked Dr Tompkins to study a blood smear of a child suffering from an unusual anemia. This was what happened according to Dr Tompkins¹⁴:

his, then, was the first diagnosis of human histoplasmosis in a living patient.¹⁵

Once detected supravitality by virtue of

*Ernest W. Goodpasture, MD, Professor of Pathology, Vanderbilt University School of Medicine.

Mycology Expands Knowledge

As suggested by Dr Tompkins, the precise mycologic work of Dr William A. DeMonbreun^{16, 17} turned this case and these experiences from a medical curiosity into a milestone in the development of knowledge of histoplasmosis. Dr DeMonbreun was graduated from Vanderbilt University and trained in pathology there. He then became a pathologist at the Nashville General Hospital. Though he had no formal training in mycology, he learned much about the morphology of inclusion bodies from Dr Goodpasture. It is of interest that the infant from whom DeMonbreun isolated *H. capsulatum* came from Williamson County, Tennessee where DeMonbreun himself was born.⁵ This area has been a fertile place for epidemiologic studies ever since. It is of added interest that the first lots of histoplasmin used by Dr Amos Christie and Dr J. C. Peterson in later years were from DeMonbreun's original cultures.⁵

When the child diagnosed by Drs Tompkins and Dodd died, Dr DeMonbreun was prepared to recover the organism by culture and animal

"Infection with *Histoplasma capsulatum* is startlingly prevalent. A recent estimate holds that perhaps 40 million persons in this country are infected and that as many as 500,000 new infections develop each year."

inoculation. He was successful and demonstrated for the first time that it was a dimorphic fungus existing in mycelial form at room temperature and in yeast form at the body temperature of mammals.¹⁶

The paper resulting from his work, which was presented in November, 1933, at the twenty-ninth annual meeting of the American Society of Tropical Medicine¹⁶ at Richmond, Virginia, has been described as a masterpiece.⁵ His description of the growth characteristics, morphology and nutritional requirements of *H. capsulatum* was so complete that little has been added to date. He fulfilled all Koch's postulates, injecting the culture material into animals that succumbed to the disease, demon-

strating the organisms in the blood of the animals during life, and then culturing it again from the organs after the animals died. The tuberculate spores, which ever since have been considered diagnostic of the mold form, were described, photographed, and interpreted conclusively in his paper.

DeMonbreun concluded that the saprophytic form of *H. capsulatum* probably existed free in

"Despite the excellent work done, by the early 1940s histoplasmosis was still considered a rare tropical disorder, uniformly fatal and apparently of little interest and importance in the United States."

nature. He suggested that the name histoplasmosis be replaced with cytomycosis to emphasize the invasion of the reticuloendothelial system, but despite the fact that Meleney also advocated this, it never became popular.⁵

In 1933, at a meeting of the American Association of Pathologists and Bacteriologists, a few months before DeMonbreun had presented his work, Drs G. H. Hansmann and John R. Schenken described work related to the isolation of a fungus which they considered to be *sepedonium*.¹⁸ Review of their work revealed that the organism probably was *H. capsulatum*. Their report preceded DeMonbreun's by approximately six months; however, it lacked the completeness of DeMonbreun's and has been overshadowed. In all justice, it would seem that Schenken, who approved the statement of Conant that "DeMonbreun, Hansmann and Schenken finally cultured the organism and proved it to be a fungus . . ." should be taken at his word.^{5, 11}

In 1939 DeMonbreun recovered *H. capsulatum* from a sick dog.¹⁷ The circumstances surrounding this finding are interesting:

Drs Alfred Blalock of the Department of Surgery and J. B. Hibbetts, Jr., Department of Medicine at Vanderbilt, were playing golf. Dr Hibbetts was concerned about his sick dog and he related the animal's symptoms of jaundice, enlarged liver, ascites and loss of weight to Dr Blalock who suggested that the dog be brought to his experimental laboratory

for examination. This was done and when the animal's abdomen was opened Dr Blalock called in Dr Ernest Goodpasture to have a look. A biopsy of the liver was taken at Dr Goodpasture's suggestion. After studying the sections of liver tissue, Dr Goodpasture announced that the dog had histoplasmosis and suggested that the dog be turned over to Dr DeMonbreun for cultural studies. After some persuasion Dr Hibbetts surrendered the family pet to me for autopsy.⁴⁶

Despite the excellent work done, by the early 1940s histoplasmosis was still considered a rare tropical disorder, uniformly fatal and apparently of little interest and importance in the United States.

Dr Meleney in 1940 — still early in the knowledge of the disease — reported on 13 previously unpublished cases.¹⁵ Other cases, usually discovered at autopsy and mostly from the central United States were reported sporadically thereafter. In 1945 Parsons and Zarafonitis³² reported a total of 71 cases from the literature together with seven of their own.

Disease Frequency Established

About this time, however, several unrelated people in various parts of the country made a series of observations that led to the suspicion and, finally, the establishment of the true frequency of histoplasma infection.

Around 1940 it became apparent that there were many persons who demonstrated intrathoracic calcifications in the presence of a negative reaction to tuberculin. Most of them resided in the Mississippi Valley.⁵

Barnard *et al*¹⁹ reported in 1931 that 327 of 1,000 adolescents in New York City were negative to tuberculin. Of these, 11 (3.4%) showed fibrous and/or calcific thoracic scars. In 1933 Crabtree *et al*²⁰ observed that in Sullivan County, Tennessee, more than one-fifth of per-

sons older than five years of age with pulmonary calcifications were negative to tuberculin. In 1938 both Nelson²¹ and coworkers and Gass *et al*²² noted that about 40% of tuberculin-negative children and young adults had pulmonary calcification on roentgenograms. In 1938 Dr Michael L. Furcolow and others participated in a conference where it was generally agreed that these observations represented a true relationship between negative reactions to tuberculin and calcification in the lungs.²³

In 1939 Crimm and Short²⁴ reported the occurrence of pulmonary calcifications in the face of negative tuberculin reactions in Evansville, Indiana. The same year Lumsden,²⁵ on the basis of prominent coincidence of negative tuberculin reactions and pulmonary calcifications in Giles County, Tennessee, where the tuberculosis mortality rate was high, questioned the value of the tuberculin test as an index of tuberculous infection.

In 1943 a report was published containing observations of a large number of chest roentgenograms made of men being inducted into the service.²⁶ Because the number of calcifications present on chest x-ray could cause rejection from military service, these concretions were noted rather carefully. Review of these films yielded the interesting and consistent observation that pulmonary calcifications were seen much more frequently in people from the Mississippi-Ohio River Valley area.¹¹ This prevalence of unexplained pulmonary calcification varied from state to state, within the states, and even in counties within the state. The reason for these differences remained unexplained.⁴

In 1941 a case of laryngeal histoplasmosis was reported by VanPernis *et al*;²⁷ this case is of particular interest because the authors used a filtrate of a broth mycelial phase culture of the organism isolated from the case to skin test the patient. Delayed positive reactions were noted to both undiluted and several ten-fold dilutions of the material. This represented the first application of histoplasmin as an intradermal antigen in man. At about the same time, use of the filtrate and heat-killed yeast vaccine as a skin antigen in animals was found effective.²⁸

This phenomenon — pulmonary calcification in the presence of a negative tuberculin reaction — indicated that it was necessary to abandon one or the other of two beliefs which were then widely held: first, that the tuberculin test

Harris D. Riley, Jr., MD, was graduated from Vanderbilt University School of Medicine. He is Distinguished Professor of Pediatrics at the University of Oklahoma Health Sciences Center. Certified by the American Board of Pediatrics, Dr Riley is a member of the Society For Pediatric Research, the American Pediatric Society and Infectious Disease Society of America.

was a stable and reliable detector of tuberculosis infection; second, that pulmonary calcifications were pathognomonic of tuberculosis.⁷²

Benign Form Identified

This dilemma was resolved by Dr Amos Christie, also of Vanderbilt. In 1943 Dr Christie was appointed professor of pediatrics at Vanderbilt University. His appointment followed extensive training in California, at Columbia University, and at Johns Hopkins University. In the course of his training he had observed first-hand the elucidation of the coccidioidomycosis problem accomplished through the work of Charles E. Smith.³⁰

On his arrival at Vanderbilt, Christie was immediately puzzled by the presence of pulmonary calcifications in the absence of positive tuberculin tests.¹⁻²⁹ Shortly after his arrival, he observed a child with fatal disseminated histoplasmosis. Armed with his knowledge of coccidioidomycosis, Christie, believing it unprecedented for an infectious disease to be uniformly fatal, theorized that there must be a benign form. He wrote to Dr Smith in California wondering whether histoplasmosis might be responsible for calcifications in persons who reacted negatively to tuberculin and coccidioidin.²⁹ A letter dated December 30, 1943, from Dr Smith to Dr Christie contained the following postscript: "P.S. Old Histoplasma holds a soft spot probably because I know so little about it, but DeMonbreun did do his epochal transmission studies at Vanderbilt and the status of histoplasmosis now is like that of coccidioid granuloma before Gifford and Dickson showed mild infections occurred."²⁹

Christie and J. C. Peterson³¹ during 1944 tested the skin sensitivity of approximately 180 children, students, and house officers, many of whom reacted positively to histoplasmin. Christie described the discovery in the following words, "It was clear to me shortly after I came here and learned about histoplasmosis and its similarity to tuberculosis and coccidioidomycosis that the proper lead was to try to find the benign form of the infection to explain the pulmonary calcification in tuberculin negative people in this area." This then was the major lead from which the epidemiology of histoplasmosis has been elucidated.¹¹

DeMonbreun,¹⁷ had already commented in his paper in 1939, "It is probable then that the disease is more common than is generally supposed, possibly because the disease may occur in a relatively mild and nonfatal form and not be recognized." Apparently, little attention was paid at the time of publication or after to this prophetic statement.⁵

Christie and Peterson's classic paper appeared in 1945.³¹ In the same year the review of Parsons and Zarafonitis³² appeared, and 71 cases of histoplasmosis, all fatal, collected from 1905 to the time of writing were described. This report represents the last time that histoplasmosis was referred to as a rare, uniformly fatal disease.

Dr Christie communicated his information to his former chief, Dr Edwards A. Park, professor of pediatrics at Johns Hopkins University. Park suggested that the matter of skin sensitivity to histoplasmin be discussed with Dr Carroll Palmer of the US Public Health Service, whose epidemiologic studies in student nurses had already shown pronounced geographic variations in the prevalence of pulmonary calcifications in tuberculin non-

"In 1938 both Nelson and co-workers and Gass et al noted that about 40% of tuberculin-negative children and young adults had pulmonary calcification on roentgenograms."

reactors. Palmer had been associated with the Public Health Service since 1932, and since 1942 he had directed the field research studies of the tuberculosis program.⁵ Palmer suspected that the spores of saprophytic airborne fungi might be responsible for calcific nontuberculous lesions. He reviewed the problem with Dr Chester W. Emmons, mycologist of the Public Health Service; Dr Emmons disagreed, however, and suggested that *H. capsulatum* was the cause.⁵

Palmer and Michael L. Furcolow visited Christie and Peterson in March 1945 and were extremely enthusiastic about the results of the Vanderbilt investigators. After learning from Christie that numerous persons in Tennessee with intrathoracic calcifications and negative tuberculin sensitivity had reacted positively to histoplasmin, Palmer obtained histoplasmin

from Dr Emmons to use in his nationwide project of skin testing of student nurses.⁵

Palmer³³ reported the results of the intradermal testing of nurses in 1945. The results showed enormous differences in the prevalence of skin sensitivity to histoplasmin between persons from different regions in the United States and a high degree of correlation between histoplasmin sensitivity and radiographic evidence of pulmonary calcification in tuberculin-negative persons.^{33, 34}

"Armed with his knowledge of coccidioidomycosis, Christie, believing it unprecedented for an infectious disease to be uniformly fatal, theorized that there must be a benign form."

Since the vast majority of persons who were tested by Christie and Palmer were asymptomatic, the existence of a benign form of histoplasmosis was strongly suggested. Several pertinent cases were described by Christie³⁵ in 1947 and documented by cultural or microscopical demonstration of histoplasma in tissue. Palmer carried out his survey of skin sensitivity in several thousand subjects; the finding permitted outlining of geographic distribution of the infection. This work has been confirmed by numerous subsequent studies. The findings added final corroboration to Christie's original observations.¹¹

Zeidberg *et al*⁷³ provided important epidemiological concepts of the prevalence and other aspects of the infection from their studies in Williamson County, Tennessee.

The incidence and rate of acquisition of histoplasmin sensitivity in children from all parts of the United States, as well as in those from other countries taking up residence in a highly endemic area, have been described.⁷⁴ Both conversion and reversion rates in this population, as well as the time required for appearance of sensitivity to histoplasmin, were reported.⁷⁵

During this period, Christie and Peterson and colleagues continued their various studies and made many contributions to the natural history of the disease.²⁹

Natural History Elucidated

Serologic methods, the first of which was the

complement-fixation test of Tennenberg³⁶ aided in clarifying the natural history of histoplasma infections, including certain epidemics of pneumonitis and, later, certain chronic cases of histoplasmosis in tuberculosis sanatoria. Beginning in 1947,^{54, 55} a series of "epidemics" of an acute febrile illness with pneumonitis was reported. The first such epidemic of pneumonitis occurred in Camp Gruber, Oklahoma,^{54, 55} and should have been clarified when the patients reacted positively to histoplasmin that had been obtained from Christie as early as 1945.⁵ However, at that time, the specificity of the histoplasmin skin test was not universally accepted. These and subsequent excellent epidemiologic studies by members of the Public Health Service demonstrated that such outbreaks were due to exposure of groups of people to unusually high concentrations of dust, usually as a result of activities such as excavation or cleaning or dismantling of buildings in which fowl or bat excreta had provided conditions favoring the growth of the fungus in soil.^{56-58, 66}

Because of the efforts of Furcolow and Grayston, many such epidemics have now been interpreted correctly.^{37, 38} By 1957 some 30 epidemics involving 350 persons had been studied, and by 1981 at least 60 outbreaks had been recognized.* The pattern was recurrent: exposure to spore-containing dust; mild to severe pulmonary disease; and general recovery followed by calcification of the pulmonary lesions.^{5, 39, 40} A rising antibody titer was usually demonstrable. Since then, several other helpful serologic tests have been introduced.

Despite the progress made in determining growth characteristics of *H. capsulatum*, there was no absolute proof of the existence of the organism in nature, and, therefore, an important bit of information about the pathogenesis of histoplasmosis was missing.¹¹

Final proof that the organism does exist in nature was obtained in 1948 when Dr Chester Emmons cultured histoplasma from two soil specimens for the first time.⁴⁴ The site of isolation was ". . . from a mound of earth at the entrance of a rat burrow under the edge of a chicken house . . ." Positive cultures were obtained after testing 156 negative specimens.¹¹

The first case of spontaneous histoplasmosis in a dog was demonstrated by DeMonbreun in 1939.¹⁷ Subsequently, Emmons described

*Riley, H. D., Jr. Epidemics of histoplasmosis. Unpublished manuscript.

spontaneous histoplasmosis in 10 species of animals; 1,120 small animals were examined and found to be negative before the first house mouse infected with histoplasma was found.⁵ Later, he showed the presence of histoplasma in a high percentage of trapped dogs and cats, suggesting the widespread character of the infection. He suggested animal infection as a useful index of the incidence of the disease in a given region.⁴⁵

Ibach, Larsh and Furcolow provided proof of possible aerogenous infection by the demonstration of histoplasma in air samples.⁴¹ In 1945 Dr Furcolow, who has contributed greatly to our knowledge of histoplasmosis, established the field station of the US Public Health Service in Kansas City for the study of histoplasmosis.^{42 43}

Since the organism was first isolated from soil, *H. capsulatum* has been isolated from soil samples from many different sites in this country. Libero Ajello and L. D. Zeidberg⁴⁷ have published epidemiologic evidence pointing toward chicken houses as the favorite place for the isolation of *H. capsulatum* in soil samples, a finding of considerable importance in relation to outbreaks of disease because it established the growth-promoting effects of fowl and bat droppings.

Thus, in a period of about five years, histoplasmosis was shown to be an almost universal and benign infection in highly endemic areas; the mode of acquisition was determined to be inhalation of soil dust; the incidence of infection in much of the United States was determined; and the areas of high prevalence were defined; and the factors favoring growth of the fungus in soil were demonstrated.⁶⁶

Morphology and Pathogenesis Clarified

Dr Thomas F. Puckett⁴⁸ examined specimens of resected lungs at Fitzsimons Army Hospital in Denver and in 1953 reported numerous coin-like lesions that in the past had been called tuberculomas. Making use of special fungus stains, he demonstrated *H. capsulatum* in these lesions. These studies represented a new development in the morphologic diagnosis of histoplasmosis. The application of a comparatively new technique had resulted in the visualization of organisms that could not be seen in sections stained with hematoxylin and

eosin.⁵ Further technical advances have now been made in the histologic diagnosis.

By this time the clarification of the disease had come a long way. Much had been learned about the organism, the epidemiology of the disease, the presence of widespread asymptomatic subclinical forms, the existence of cavitary lesions and, finally, the demonstration by morphologic methods of apparently nonviable forms of *H. capsulatum* in isolated lung lesions.⁵

In 1954 an important link in the pathogenesis of histoplasmosis was discovered by Dr Manuel Straub. He demonstrated that in Cincinnati the overwhelming majority of arrested human primary complexes in the lungs contained organisms that were morphologically identical with *H. capsulatum*.⁴⁹ These findings established the specificity of the histoplasmin skin test and proved without question that histoplasmosis, in the vast majority of cases, is a primary pulmonary disease.¹¹ It was Dr Straub's work that showed that the organism is present if searched for by proper methods.

Baum¹¹ summarized other important contributions to our knowledge of the disease, such as the identification of a separate species of histoplasma by Vanbreuseghem in Africa (*Histoplasma duboisii*) with its attendant large forms in human tissues; the demonstration that American strains of *H. capsulatum* can produce large forms in hamsters; the fractionation of antigenic substances from the yeast cell of *Histoplasma capsulatum*; the electron microscopic finding that the apparent capsule of *Histoplasma capsulatum* is not a capsule at all, but represents contraction of the organism within the tissues; and, finally, the development of chemotherapeutic agents which give great promise of being effective against histoplasmosis clinically.

Goodwin, Des Prez, and associates at the Vanderbilt University Medical Center have made important contributions in recent years to our knowledge of the pathogenesis of histoplasmosis, especially the pulmonary forms of the disease.⁶⁵⁻⁷² Chronic pulmonary histoplasmosis was first noted in an autopsy in 1941 by Meleney⁵⁹ and was first diagnosed in living patients in 1948 by Johnson and Batson.⁶⁰ These observations, which indicated that pulmonary histoplasmosis closely resembled chronic pulmonary tuberculosis, prompted Furcolow and Brasher to survey several tuberculosis sanatoria in the central United States, where they

discovered many patients who were believed to have advanced cavitary tuberculosis, but actually yielded *H. capsulatum* rather than *Mycobacterium tuberculosis* in their sputum cultures.⁶¹

This experience, focusing as it did on a patient population that was chronically hospitalized, gave rise to the concept that chronic pulmonary histoplasmosis was a slowly prog-

"Palmer suspected that the spores of saprophytic airborne fungi might be responsible for calcific nontuberculous lesions . . . Dr Emmons disagreed, however, and suggested that *H. capsulatum* was the cause."

ressive and usually fatal debilitating illness accompanied by respiratory insufficiency. The more frequent and clinically different, early pneumonic form of chronic pulmonary histoplasmosis, which may progress to advanced cavitary pulmonary disease but more often subsides without antimicrobial therapy, was described at Vanderbilt in 1966.⁷¹ These studies showed that there is a more benign form of histoplasmosis which heals spontaneously in 80% of cases and that the progressive cavitary disease occurs in only 20%.⁷¹ The most recent studies indicate that chronic pulmonary infection is opportunistic and represent colonization of pre-existing abnormal pulmonary air spaces associated with emphysema, which emphasizes the importance of host factors in disease production by this widely prevalent fungus.⁶⁸

In 1953 *H. capsulatum* was demonstrated in calcified pulmonary and hilar lymph node granulomas,⁴⁸ and in 1955, the primary lesions of histoplasmosis were described more completely.⁴⁹ In 1958 and 1959, persisting histoplasmosis forms were demonstrated in mediastinal granulomas⁶² and in the lesions of mediastinal sclerosis or collagenosis.⁶³ In 1960, Baum and associates⁶⁴ pointed out that certain pulmonary "coin lesions" resulting from histoplasmosis could enlarge slowly over long periods. In 1969 Goodwin and Snell⁷⁰ proposed that pulmonary histoplasmoses, which enlarged over the course of several years, did so because the host tended to respond to the pres-

ence of antigen at the center of the histoplasma with exuberant and slowly progressing collagen formation and fibrosis. In 1972, this same fibrogenic aberration in host response was implicated in the potentially damaging effects of histoplasma-induced mediastinal granulomas and mediastinal fibrosis on critical mediastinal structures such as the pulmonary arteries, veins, bronchi, and the superior vena cava in the serious clinical disturbance known as mediastinal fibrosis or collagenosis.⁶⁷

In 1980 Goodwin, Shapiro and colleagues⁶⁹ at Vanderbilt reported on a thorough analysis of 102 cases of disseminated histoplasmosis and presented several important clinical-pathologic correlations. They postulated that most cases of disseminated disease occur in patients with a defect in immunologic capacity of varying degree, which may or may not be demonstrable by present methods, and may be transient.

In 1981 Goodwin, Loyd and Des Prez⁷² at Vanderbilt presented a comprehensive review of histoplasmosis in normal hosts.

This is a brief overview of the story of histoplasmosis. There are many unusual aspects of this story. Few important diseases have been clarified in so short a time as has histoplasmosis. Formerly regarded as a rare and fatal illness, it is now known to be a frequent infection with many different clinical presentations, especially in endemic areas. It is unusual, as pointed out by Baum,¹¹ that so many contributions to knowledge of a major disease have originated from a single institution, in this case Vanderbilt University. To be sure, certain major problems still remain: the exact means by which the soil becomes infected with spores of the organisms has not been established; treatment of the disease is far from satisfactory; and effective vaccination is lacking.⁵ The progress to date suggests that these problems will be resolved in the foreseeable future.

Note. Much of the information included in this communication has been derived from conversations with Dr Amos Christie and from references numbers 5 and 11.

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Histoplasmosis / RILEY

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Impotence: A Surgically Manageable Disease

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Restoration of a man's disturbance in sexual performance can be made possible through recent advances in prosthetics and prosthetic surgery.

Potency is defined by Webster's dictionary as the "quality or state of being potent; esp., ability to effect a certain result." Translated to male sexual potency, this would imply the ability to initiate, sustain and consummate a satisfactory sexual act. Conversely, impotence is defined as "incapacity for sexual intercourse." Within the context of this discussion, impotence is defined as inability to obtain and maintain an erection sufficient for satisfactory penetration.

Impotence has plagued man from time immemorial. Throughout recorded history, man has sought to reproduce and to maintain the ability to achieve an erection. Consequently, some men became an easy prey to certain fads, fancy concoctions, questionable surgery, and even sorcery practiced by charlatans and itinerant physicians. Hippocrates is reported to have said that preoccupation with business

and lack of womanly attractiveness could cause impotence.¹ Early practitioners attributed various causes to this problem, ranging from excessive emissions and evil spirits to association with irreputable women. Gee¹ quotes Benjamin Rush, in a lecture to medical students in 1830 on the "Morbid State of the Sexual Appetite," as saying that "when indulged in, an undue or a promiscuous intercourse will produce seminal weakness, impotence . . . tabes dorsalis, fatuity, and death."

The pioneer work of Kinsey and Masters and Johnson greatly advanced understanding of human sexuality. In turn, the progress made in understanding the anatomy and neurophysiology of the male generative system has led to development of innovative approaches to managing impotence, more appropriately referred to as erectile dysfunction.

Anatomy and Neurophysiology of Erection

Erectile dysfunction can be a manifestation of profound psychopathology or organic disease or some combination of both. To understand this dysfunction, it is necessary first to understand the anatomy and neurophysiology of erection.

Anatomy. The penis is composed of two cylindrical bodies (corpora cavernosa) extending from beneath the pubic bones to the glans penis. These cylinders are composed of a tough

elastic outer sheet called tunica albuginea. Within each is an exquisitely devised spongy erectile tissue arranged in small vascular compartments. Blood is supplied to the corpora cavernosa from the pudendal artery, which is a branch of the hypogastric artery. Both the automatic and somatic nerves supply the genitalia.

Physiology of erection. Erection can result either from local stimulation of genitalia (reflexogenic) or from stimulation of cerebral erotic centers through fantasies, memories, etc. (psychogenic).

In response to these afferent stimuli, the efferent parasympathetic neural outflow from

"Hippocrates is reported to have said that preoccupation with business and lack of womanly attractiveness could cause impotence."

S₂-S₄ segments of the spinal cord (nervi erigentes) will trigger an erectile reaction. The actual conversion of a flaccid penis to an erect one is basically a vascular phenomenon.

Stimulation of nervi erigentes leads to engorgement of the corpora cavernosa by dilatation of the penile arteries. At the same time, there is some impediment of the venous outflow. This complex rearrangement of the vascular flow was first described by Contie in 1952.² He described the presence of "polsters" that act as valve-like structures in the walls of the arterioles and the venules, facilitating the reshunting of the blood and thereby increasing the flow to the corpora. Experimentally, Newman et al³ could induce tumescence by infusion

of 20-50 cc of saline per minute, and erection could be sustained by 12 cc per minute. The sympathetic nervous system more commonly associated with ejaculation has been implicated in producing erection.⁴ There also is evidence of the presence of a higher erectile center in the thoraco-lumbar region mediating psychic stimuli.⁵ It is important to note that our knowledge of the neurophysiology of erection is based mostly on animal models.

Diagnosis. Evaluation of the patient entails obtaining a complete medical history. This should include a detailed questionnaire to be answered by frank, descriptive responses. Special emphasis is put on the history of intake of any medications or drugs. Involvement of the partner cannot be overemphasized in the initial interview. The patient is given a careful general examination, with special consideration on ascertaining the vascular, neurologic, and anatomic integrity of the genitalia.

Laboratory investigation includes the routine screening tests such as Chem-18, hemogram, and urinalysis. The need for plasma hormonal assays and other esoteric tests, as well as for psychological evaluation, is determined by the history and physical examination. The nocturnal penile tumescence test (NPT) popularized by Karacan⁶ was found to be useful in differentiating biogenic from psychogenic impotence. This test requires the use of a bedside monitoring machine with string gauges placed on the shaft of the penis. A normal individual exhibits several erections associated with rapid eye movement (REM) activity during sleep. In certain individuals, phallography, pelvic angiography, and measurement of penile blood pressure can aid in diagnosis. Table 1 illustrates the breakdown

TABLE I
IMPLANTS BY ETIOLOGY

	#
Alcoholism	3 (<1%)
Diabetes Mellitus	338 (27%)
Drug/Chemical Therapy	24 (2%)
Peyronies Disease	70 (6%)
Priapism	20 (1%)
Psychogenic Factors	73 (6%)
Radical Pelvic Surgery	210 (17%)
Spinal Cord Injury	79 (6%)
Truma, pelvic and/or genital	107 (9%)
Vascular Disease	115 (9%)
Other	204 (16%)
TOTAL	1,243

*Courtesy of American Medical Systems, Minnetonka, Minnesota.

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Fig 1. Small-Carrion Prosthesis, manufactured by American Heyer-Schulte Corporation, Goleta, CA.

on the etiology of 1,243 patients implanted by 21 surgeons.

Management of Impotence

Management. After the evaluation is made and a reasonable diagnosis is obtained, the patient is categorically managed either medically or surgically. The medical management of impotence, which falls beyond the scope of this discussion, can imply psychosexual counseling, treatment of an underlying illness, drug therapy, or any combination of the above.

Surgery. Phenomenal advancements have occurred in recent years in the surgical management of impotence. The idea of implanting a prosthesis is not a novel one. The earliest attempts to implant an autologous material, such as a rib graft by Bergman⁷ and cartilage by Bogoros as cited by Gee,¹ have failed. Acrylic and polyethylene rods⁸ were implanted

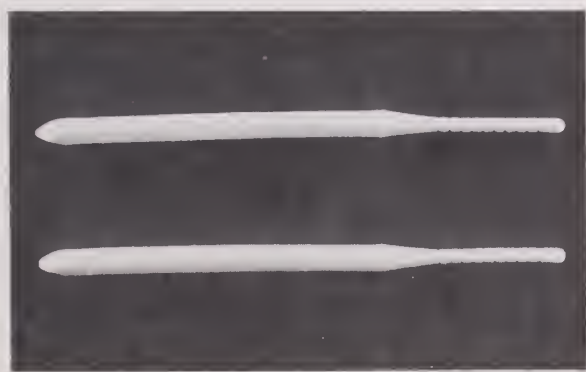


Fig 2. Finney's Flexi-Rod Penile Prosthesis. The narrow end can be trimmed for sizing and the main shaft has a hinge. Produced by Medical Engineering Corporation, Racine, WS.

later, but the real breakthrough came with the introduction of silicone rubber. The inert nature of this material enabled the host to better tolerate the implantation of this relatively non-reactive material.

Currently, there are two types of penile implants available with some modifications. One is the semi-rigid prosthesis and the other is an inflatable one. The popular semi-rigid prostheses are the Small-Carrion,⁹ introduced in 1975; the Finney¹⁰ "Flexi-rod," introduced in 1977; and the Jonas¹¹ introduced in US in 1980. The Small-Carrion consists of two paired silicone rods: (Fig 1) The Finney is a variation of the Small-Carrion in that it has a hinge at some point permitting the penis to bend for better concealment. (Fig 2) The Jonas has braided silver wires imbedded within the rubber core, making it malleable; hence it can conform to various positions. (Fig 3) The inflatable prosthesis, developed by Scott *et al*,¹² was first implanted in 1973. (Fig 4) It is hydraulically controlled and mimics closely the natural process by the presence of two expandable cylin-

"... the progress made in understanding the anatomy and neurophysiology of the male generative system has led to development of innovative approaches to managing impotence . . ."

ders implanted within the corpora. The two cylinders are connected by tubings to a fluid-filled reservoir and a small pump. This pump is implanted subcutaneously in the scrotum and the reservoir behind the rectus muscles. By repeatedly squeezing the pump, fluid from the reservoir is directed to the expandable cylinders. Hence, a person has control not only over his erectile state but also over the degree of the erection. Pressing a small valve located at the bottom of the pump causes the fluid from the penile cylinders to return to the reservoir, and the penis resumes a flaccid position.

Each prosthesis has its advantages and disadvantages. The semi-rigid ones are easier to implant, have no mechanical parts to malfunction, and cost less than the inflatable one. The Scott inflatable prosthesis requires a more involved surgical procedure, is more expensive,



Fig 3. Jonas Prosthesis. The imbedded silver wires within the core render it malleable. Furnished by Dacomed Corporation, Minneapolis, MN.



Fig 4. The inflatable penile prosthesis. Produced by American Medical System, Inc. Minnetonka, MN.

TABLE II

Current Price of Penile Prosthesis

Small-Carrion	\$ 430.00
Flexi-Rod	\$ 480.00
Jonas	\$ 890.00
Inflatable	\$1,700.00

and can malfunction. Consequently, careful consideration is required when selecting a particular type of prosthesis to suit each individual. Table II shows the current price of each prosthetic device.

Outcome. Successful implantation can be expected in 90% of patients. Complications for all types of prosthesis are in the range of 10%. Naturally, the hydraulically operated inflatable device has a higher rate of complications. However, most mechanical problems can be corrected readily, and secondary surgical procedures can further enhance the success rate. The risk of infection inherent in all implantable heterologous material is always present and may require removal of the prosthesis.

Prospects for improvements in this area appear promising since further research and innovations will open new frontiers, both surgical and medical, that ultimately will prove beneficial to the impotent patient.

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Cushing's Syndrome from an ACTH-Secreting Pheochromocytoma

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Early clinical recognition of this uncommon disorder may limit the morbidity and mortality associated with this non-malignant but potentially lethal tumor.

Pheochromocytoma is generally considered an uncommon disorder.¹⁻³ Despite a reported prevalence of 0.1% in the general population,^{4, 5} a recent autopsy study suggests that as many as 76% of patients with pheochromocytoma may not be identified during life.⁵ Although many cases escape detection because the tumor may be clinically silent,^{6, 7} the protean clinical expressions of the pheochromocytoma also contribute to the difficulties in diagnosis.⁸⁻¹³ The present case report describes a patient with Cushing's syndrome who was found to have an ACTH-secreting pheochromocytoma.

The ectopic ACTH syndrome (ectopic

Cushing's syndrome) is thought to represent about 15% of all causes of Cushing's syndrome.¹⁴ In contrast to most other causes of ectopic Cushing's syndrome, the disorder caused by pheochromocytoma is potentially completely curable. This consideration prompted us to report our experience with a case and to review the available literature on ACTH-secreting chromaffin tumors to determine the clinical significance of early detection of the disorder.

Case Report

A 62-year-old white female developed signs of Cushing's syndrome during a two-month period prior to her admission. In that time she developed facial and supraclavicular fullness, facial hair, and a paroxysmal flush of the face and upper thorax. She also experienced episodes of severe headache and feelings of anxiety. No abdominal or axillary striae developed, nor was a change in skin pigmentation evident. Before her referral, she developed congestive heart failure and responded well to therapy with diuretic and digoxin. Persistent hypokalemia had been treated with potassium supplementation, but was difficult to control.

The patient appeared acutely ill and displayed cushingoid facies with thin skin and facial hair. The blood pressure was 150/96 mm

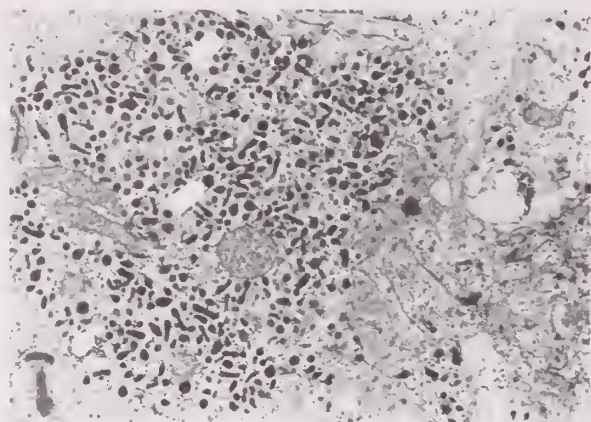


Fig 1. - Electron photomicrograph of pheochromocytoma tissue. The abundant dark secretory granules (arrows) have been noted in other cases of pheochromocytoma (original magnification x18,460).

Hg, the heart rate was 104 per minute, and the temperature was 99.6° F. There were rales in both lung fields. The cardiac impulse was displaced leftward and an S-3 gallop was present. The liver was enlarged to percussion. Proximal muscle weakness was present. The muscle stretch reflexes were normal. Pelvic examination revealed evidence of vaginal candidiasis, but no other abnormality.

The patient was admitted to the intensive care unit. Admission arterial blood gases were: pH 7.66, PO₂ 40 mm Hg, PCO₂ 43 mm Hg, calculated HCO₃ 49 mEq/L. The white blood count was 18,400 (76 segmented neutrophils,

17 band neutrophils, 4 lymphocytes, 1 monocyte, and 2 metamyelocytes). The hemoglobin was 11.5 gm/dL. Serum electrolytes were: sodium 143 mEq/L, potassium 2.8 mEq/L, chloride 81 mEq/L, bicarbonate 41 mEq/L. The serum glucose was 195 mg/dL, the serum urea nitrogen was 9 mg/dL, and the serum creatinine was 0.7 mg/dL. The chest radiograph revealed borderline cardiomegaly with minimal congestion and diffuse bilateral infiltrates in the left upper and right lower lung fields. The electrocardiogram was normal.

Initial therapy was directed toward correcting the hypokalemia (parenteral potassium) and treating a staphylococcal pneumonia with hypoxemia (cefamandole and oxygen).

Diagnostic studies conducted prior to admission suggested the existence of a persistent hypercortisolemia that did not suppress normally following the administration of high-dose dexamethasone (2 mg dexamethasone every six hours for 48 hours). The morning serum cortisol level was 84 mcg/dL (normal, 5-20 mcg/dL), and the evening level was 55 mcg/dL (normal, 2-9 mcg/dL). The 24-hour urinary excretion of 17-hydroxycorticosteroids (17-OHCS) was 43 mg/24 hr (normal, 3-10 mg/24 hr) and of 17-ketosteroids (17-KS) was 13.7 mg/24 hr (normal, 5-15 mg/24 hr). A high-dose dexamethasone suppression test was repeated, and after two days of 8 mg/day dexamethasone, the urinary excretion of 17-OHCS was 40 mg/24 hrs (normal, decrease to less than 50% of the basal 17-OHCS excretion¹⁵). The urinary excretion of free

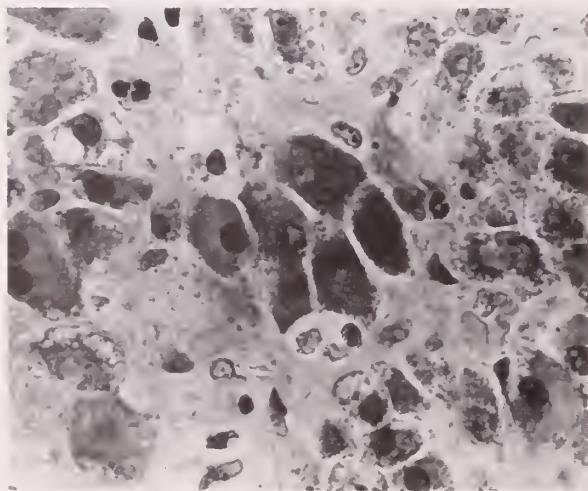


Fig 2a - Immunoperoxidase localization of ACTH in pheochromocytoma tissue. Cells with darkened cytoplasm are positive for ACTH (original magnification x900).

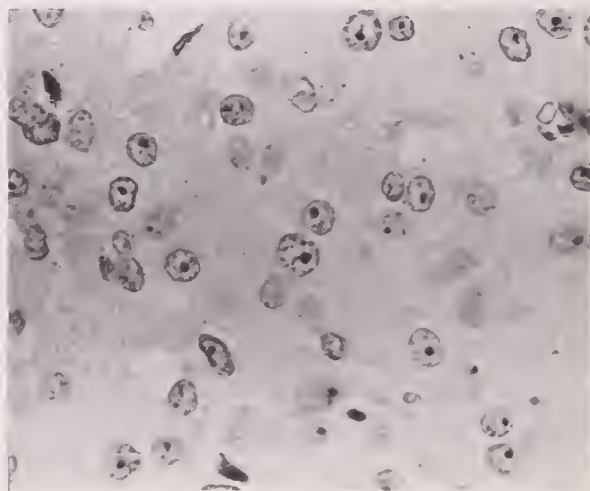


Fig 2b. - Pheochromocytoma tissue control. Absence of cytoplasmic darkening indicates lack of non-specific activity in the immunoperoxidase technique (original magnification x900).

cortisol following high-dose dexamethasone suppression was 2490 mcg/24 hr (normal, decrease to less than 25 mcg/24 hr¹⁶). The urinary excretion of vanillylmandelic acid (VMA) was 17 mg/24 hr (normal, less than 10 mg/24 hr).

Considering the rapid development and progression of the signs of Cushing's syndrome, the abnormal dexamethasone suppression tests, and the elevated VMA excretion, a diagnosis of ectopic ACTH syndrome was entertained. An adrenal medullary tumor (pheochromocytoma) was suspected as the ectopic source of ACTH. Additional diagnostic evaluations were conducted to confirm the diagnosis.

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Urinary excretion studies for 17-OHCS and free cortisol were repeated at the time of admission. Excretion of 17-OHCS was 22.8 mg/24 hr and of free cortisol was greater than 3175 mcg/24 hr (normal, 20-90 mcg/24 hr). Urinary excretion of metanephrines was 2.5 mg/24 hr (normal, less than 1.3 mg/24 hr). Morning plasma cortisol was 67.8 mcg/dL. Plasma norepinephrine (NE) and epinephrine (E) by high performance liquid chromatography were 4115 pg/ml (normal, less than 900 pg/ml) and 1559 pg/ml (normal, less than 100 pg/ml), respectively (Mayo Medical Laboratories, Rochester, Minnesota). Plasma NE was 3891 pg/ml and E was 1714 pg/ml by a radioenzymatic assay in our laboratory.¹⁷ Plasma ACTH, measured with a CIS radioimmunoassay kit, was 376 pg/ml (normal, 10-100 pg/ml).

Computer-assisted tomography of the abdomen revealed a 4-5 cm mass anterior to, and above the right kidney. The left adrenal was visualized and appeared larger than normal, but with normal configuration. An¹³¹I-19-iodocholesterol scan was performed and demonstrated uptake in both adrenal glands.

"Despite a reported prevalence of 0.1% in the general population, a recent autopsy study suggests that as many as 76% of patients with pheochromocytoma may not be identified during life."

The results of these radiographic studies were consistent with the initial diagnosis and, together with the biochemical studies, suggested the presence of a pheochromocytoma of the right adrenal gland. The tumor, in addition to secreting large amounts of NE and E, also secreted sufficient ACTH to stimulate both adrenal cortices with the resultant effect of producing hypercortisolemia and Cushing's syndrome.

Venography with selective venous sampling was performed to confirm that the right adrenal mass was, in fact, the source of both the excessive ACTH and catecholamine secretion. The results of the venous sampling study are

shown in Table 1. This study demonstrated that the venous drainage from the right adrenal gland had markedly higher concentrations of NE, E, and ACTH than any other site sampled and supported our initial clinical impression.

Because of the very high plasma cortisol levels and the rapid progression of the effects of hypercortisolemia, the patient was given aminoglutethimide and metyrapone to block endogenous cortisol synthesis. Aminoglutethimide blocks the enzymatic conversion of cholesterol to Δ^5 -pregnenolone, the initial step in the biosynthesis of the corticosteroids.

TABLE 1. Norepinephrine (NE), Epinephrine (E), and ACTH Concentrations at Several Venous Sites in a Patient with an ACTH-Secreting Pheochromocytoma.

Site	NE (pg/ml)	E (pg/ml)	ACTH (pg/ml)
LAV	2,241	2,901	80
Peripheral	1,510	517	102
RAV	251,368	124,543	388
Peripheral	1,683	491	80
IVC	5,837	2,717	110
Peripheral	2,077	608	114
RIPS	4,125	1,343	102
Peripheral	1,906	623	96
RIJV	3,806	1,534	134
Peripheral	2,219	747	118
SVC	3,497	1,350	112
Peripheral	2,394	708	100

LAV = Left adrenal vein; Peripheral = Peripheral venous sample drawn simultaneously with that from indicated site; RAV = Right adrenal vein; IVC = Inferior vena cava above level of renal veins; RIPS = Right inferior petrosal sinus; RIJV = Right internal jugular vein; SVC = Superior vena cava.

Metyrapone provided additional blockade, interfering with the conversion of 11-deoxycortisol to cortisol. The patient was given physiological doses of dexamethasone to avoid the development of adrenal insufficiency. Phenoxybenzamine and propranolol were added to the medical regimen to block the effects of the extremely elevated levels of plasma NE and E.

Based on the results of the diagnostic evaluation, surgery for the removal of the right adrenomedullary tumor was planned, but was delayed because of preoperative complications. The patient developed deep vein thrombosis of the leg and the staphylococcal pneumonia recurred. Anticoagulant and antibiotic therapies were instituted. Both problems resolved suf-

ficiently over a period of three weeks to permit surgery for the adrenal tumor.

At surgery a highly vascular, 5 x 6 cm tumor of the right adrenal gland was removed. There was no local invasion by the tumor of contiguous structures, and no other masses were found during exploration of the abdomen. Histopathologic diagnosis of the tumor was pheochromocytoma. This was confirmed by electron microscopy. (Fig 1) The adrenal cortex was unremarkable. Immunoperoxidase localization of ACTH in the tumor tissue was performed on 4 μ paraffin sections using the reagents from a HistoetTM kit #123 (Immulok, Inc., Carpinteria, CA).¹⁸ The results of the immunoperoxidase localization studies demonstrated that approximately 15% of the cells in the tumor tissue were positive for ACTH. (Fig 2a) An adjacent tissue specimen served as a control and demonstrated the absence of nonspecific immunoperoxidase activity. (Fig 2b)

We also measured the circulating plasma levels of NE, E, and ACTH soon after removal of the tumor and daily thereafter for six days.

"... A correct preoperative diagnosis may influence management plans to improve the outcome of patients with this nonmalignant but potentially lethal tumor."

(Table 2) Within eight hours after the tumor was excised, plasma ACTH and E decreased abruptly and plasma NE decreased slightly compared with preoperative levels. On the first postoperative day, the levels of ACTH, NE, and E were all substantially decreased and stabilized at that lower level over the ensuing five days of monitoring. This provided additional evidence that the pheochromocytoma in this patient produced ACTH as well as NE and E.

The patient's hospital course after surgery was uneventful, and she was discharged on the eighth postoperative day. At follow-up several weeks after removal of the pheochromocytoma, the patient's blood pressure was normal and the stigmata of Cushing's syndrome were resolving.

Case Discussion

Forman *et al*¹⁹ recently reported a case of ectopic ACTH syndrome due to pheochromocytoma and reviewed the world literature to

TABLE 2. Cortisol, ACTH, Norepinephrine and Epinephrine Levels in a Patient with an ACTH-Secreting Pheochromocytoma.

	Days Pre-Operative				(Hours) Days Post-Operative					
	Normal Range (Admission)	32	22	(8)	1	2	3	4	5	6
Blood Pressure mm Hg		150/96	112/74	120/80	120/70	138/76	138/80	140/72	110/60	128/70
Pulse per min		104	104	100	90	100	80	96	84	72
Plasma Cortisol (AM) mcg/dL	7- 25	68								
Urinary Free Cortisol mcg/24 hours	20- 90	> 3175								
Plasma ACTH pg/ml	4-100	376	102	24	< 10	< 10	< 10	< 10	< 10	< 10
Plasma Norepinephrine pg/ml	< 900	3891	1510	1137	420	489	381	482	403	519
Plasma Epinephrine pg/ml	< 100	1714	517	63	22	23	16	19	14	9

1979 (28 cases) on ectopic ACTH syndrome associated with chromaffin tumors. A set of ideal criteria was suggested by these authors for establishing that the tumor is the site of ectopic ACTH production. The conditions that should be fulfilled are: (1) clinical and laboratory evidence of hypercortisolism, (2) clearly elevated plasma ACTH levels, (3) elevated ACTH levels in the venous effluent from the tumor, (4) decreased plasma ACTH levels after removal of the tumor, and (5) ACTH activity in tumor extracts. Of the 28 cases they reviewed, only seven¹⁹⁻²⁵ were considered to be adequately documented, and none fulfilled all of the above criteria. Since 1979 two additional cases have been reported associating pheochromocytoma with ectopic ACTH syndrome. The patient presented by Spark *et al*²⁶ fulfilled all five criteria, while the patient reported by Hoffman *et al*²⁷ met four.

In our patient, the clinical diagnosis of ectopic ACTH syndrome was suggested on the basis of: (1) the relatively sudden onset and rapid progression of the signs of Cushing's syndrome, (2) the lack of suppression of plasma cortisol and urinary free cortisol after two days of high-dose (8 mg/day) dexamethasone, and (3) the elevated urinary excretion of VMA and

the elevated plasma levels of NE and E, and ACTH. Appropriate management of the patient required further studies in order to localize the site of the pheochromocytoma thought to be present and to establish that the chromaffin tumor was the source of the excessive secretion of ACTH responsible for the hypercortisolism in this patient.

Localization of the pheochromocytoma was accomplished by computerized tomography of the abdomen and was verified by venography and selective adrenal vein sampling studies. The NE and E levels of the adrenal venous effluents clearly identified the site of the pheochromocytoma and confirmed the CT findings. By measuring the ACTH levels in blood samples taken from several locations in the venous circulation, we demonstrated that a markedly elevated level was found only in the sample representing the venous drainage from the tumor. (Table 1) These data constituted the preoperative evidence for the presence of a functioning pheochromocytoma of the right adrenal medulla which also produced and secreted clinically significant amounts of ACTH.

Our attempts to provide an etiologic diagnosis for this patient in support of the clinical

diagnosis permitted us to satisfy the five criteria proposed by Forman et al¹⁹ that the pheochromocytoma was secreting ACTH. Four criteria proposed by Forman et al¹⁹ that the were: (1) the presence of hypercortisolism biochemically and its clinical expression as Cushing's syndrome, (2) clearly elevated plasma ACTH levels, (3) elevated ACTH concentrations in the venous effluent from the tumor site, and (4) greatly diminished plasma ACTH levels after removal of the tumor. The diagnosis was confirmed (and the fifth criterion satisfied) by demonstrating specific ACTH activity in the tumor tissue.

Considering the patient reported here together with the nine patients reported previously,¹⁹⁻²⁷ an observation emerges which deserves emphasis. In each of the cases reviewed, the ACTH-secreting pheochromocytoma (two were called paraganglioma) was unilateral and was nonmetastatic. This made surgical excision of the tumor possible in each case with an excellent prognosis for complete cure of the disorder. This is in direct contrast to the ectopic ACTH syndrome caused by most other tumors which are generally malignant and are associated with a much poorer prognosis. Although the ectopic ACTH syndrome associated with pheochromocytoma is unusual, we recommend screening tests for the presence of chromaffin tumors (urinary metanephrines, free catecholamines, VMA, and/or plasma norepinephrine and epinephrine) as part of the evaluation of every patient with Cushing's syndrome. In those patients diagnosed preoperatively, 75% survived; if the diagnosis was not made preoperatively, the survival rate was 50%. These data suggest that a correct preoperative diagnosis may influence management plans to improve the outcome of patients with this nonmalignant but potentially lethal tumor.

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News From The Oklahoma State Department of Health

Car Restraint Systems

Each year more than 95% of the children killed or injured in traffic accidents are not protected by a child restraint or adult seat belt at the moment of impact.

Many parents are unaware that even at speeds of 30 mph or less, the impact of a sudden stop or crash could hurl an unrestrained child into the unrelenting surfaces of a vehicle, or even through the windshield. And holding a child is no protection against accidental injury — in fact, infants can be crushed by the body weight of an adult in the event of a crash. Even minor collisions are sudden, powerful, and most importantly, *unpredictable*. The only way to assure a child's safety is with a specially designed car safety seat.

There are several types of approved car restraint systems available today. When shopping for one of these systems, parents should look for: 1. car seats designed to be fastened in place by a vehicle seat belt; 2. seats high enough to provide proper head protection; 3. special harness straps or foam-padded shields to secure child's body; 4. special padding (not just sponge rubber) cushioning all areas the child's head might hit, and 5. tether straps for seats designed to be anchored at the top.

Parents should be advised to read and follow manufacturers' instructions carefully. Even the best car seat — if used improperly — can lose up to 90% of its effectiveness. ☐

COMMUNICABLE DISEASES IN OKLAHOMA FOR NOVEMBER, 1982

DISEASE	NOVEMBER	NOVEMBER	OCTOBER	TOTAL TO DATE	
	1982	1981	1982	1982	1981
Amebiasis	—	—	—	11	24
Aseptic Meningitis	24	7	32	198	101
Brucellosis	1	—	2	8	7
Encephalitis, Infectious	2	3	4	38	25
Gonorrhea (Use Form ODH-228)	1096	1341	1267	14440	14654
Hepatitis A	50	29	87	679	281
Hepatitis B	23	17	30	316	211
Hepatitis Unspecified	46	19	36	276	147
Malaria	—	1	—	8	8
Measles (Rubeola)	—	—	3	30	6
Meningococcal Infections	3	6	3	30	46
Pertussis	1	—	—	6	2
Rabies (Animal)	13	8	13	185	207
Rocky Mountain Spotted Fever	—	—	4	76	99
Rubella	—	—	—	3	2
Salmonellosis	31	38	88	437	392
Shigellosis	26	47	68	376	424
Syphilis (Use Form ODH-228)	20	13	18	190	167
Tetanus	—	1	—	1	2
Tuberculosis	22	30	22	301	302
Tularemia	—	6	7	32	32
Typhoid Fever	—	—	1	3	5

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Technological Advances Make 1982 Notable Year in Medicine

The impact that technology has made on the art of medicine took a leap forward in 1982 as new methods of looking inside the human body and healing its ailing parts came out of the laboratory and into the hands of the physicians.

Here are some of the events in medicine that made 1982 a notable year:

Artificial heart. The surgery to implant the polyurethane plastic and aluminum Jarvik-7 heart into Barney Clark began late on the night of December 1, but it was not until early the next day that the mechanical pump was empowered by compressed air to support a human life. The historic event came one day short of the fifteenth anniversary of the first human heart transplantation.

Nuclear magnetic resonance (NMR). This technology and the machinery designed to apply it have the potential to revolutionize the way physicians look inside the body. NMR works with magnets instead of X-rays, eliminating the need for injected contrast dyes and radioactive solutions on which older diagnostic techniques depend.

The images are similar to those made by CAT scanners, in the sense that they are assembled with the aid of a computer and represent a cross-sectional view through an organ or an area of the body. But the similarity ends there; NMR is capable of displaying a kind of biochemical blueprint of cellular activity as well as pictures that are sharper and more detailed than those produced by a CAT scanner.

Medical lasers. Lasers continue to make inroads to areas of the body where only the scalpel went before. Brain surgeons have used them to excise tumors; dermatologists focus the light-knife beams to eradicate skin cancer; and gynecologists have found lasers useful in treating diseases of the female genital tract.

On the forefront of laser technology is the laserscope, in which light is transmitted through fiberoptics in a small flexible tube. In laboratory experiments, a multi-channel catheter — with a laser beamed through one channel — is being tested as a way to vaporize clotted material in the arteries that feed the heart.

Streptokinase. This clot-dissolving enzyme was approved by the Food and Drug Administration in 1982 for use in treating heart attacks. Given to appropriate patients in the early stages of a heart attack, the drug holds the

potential for restoring circulation to a choked-off section of heart muscle and for preserving the vitality of the cells that otherwise would die.

Cyclosporin. Much of the credit for the improvement in survival after organ transplantation — and for the resurgence of transplantation surgery, belongs to this drug, which was originally isolated from fungi in soil samples from Wisconsin and Norway. Cyclosporin suppresses production of the T-lymphocytes that lead the body's attack against foreign tissue.

Synthetic human interferon. Gene-splicing techniques have made possible the production of what promises to be an ample supply of interferon. In early clinical use, the synthetic variety has shown anticancer activity in patients with non-Hodgkin's lymphoma, breast cancer, chronic lymphocytic leukemia, Hodgkin's disease, and melanoma.

Synthetic interferon has been produced by a laboratory strain of *Escherichia coli* that was engineered to contain the human gene governing production of interferon. As it divides and redivides, each bacterium serves as an interferon factory, manufacturing interferon that is identical in structure and biologic activity to that produced by human white blood cells. □

ASIM Program Seeks to Help Unemployed Get Medical Care

The American Society of Internal Medicine (ASIM) has initiated a project to help unemployed workers continue receiving medical care from their personal physicians. The project grew out of concern for millions of Americans who have lost their health insurance benefits because of temporary unemployment and who are unable to afford necessary medical care.

The first step in the project is based on ASIM's belief that caring for unemployed workers can best be done in the traditional way — in the fee-for-service, private-sector arena where the majority of medical care is and will continue to be given. While referral networks and charitable clinics are partial solutions, ASIM believes that, whenever possible, personal physicians should continue to care for temporarily unemployed patients, regardless of their ability to pay.

ASIM has prepared a sample letter for internists to adapt and distribute to their patients, expressing concern about any economic hardship they may be experiencing and assuring patients that they can continue to receive care from their personal physician. ASIM also is urging internists to act as catalysts and to initiate discussions with local hospitals and medical societies to explore ways to provide back-up programs to care for those who do not have a personal physician or access to one.

The goal of these efforts is to help keep patients from deferring or discontinuing necessary care or seeking care from "strangers" in expensive hospital emergency rooms or other settings. □

Trustees Elect 18 Physicians As Association Life Members

Eighteen Oklahoma physicians were awarded Life Memberships in the Oklahoma State Medical Association (OSMA) by the OSMA Board of Trustees at trustee meetings in September and November 1982. The new Life Members are:

Edward W. Bank, MD, Enid
Harry L. Deupree, MD, Oklahoma City
Eugene M. Henry, MD, Muskogee
Byron C. Hollenback, MD, Altus
Robert P. Holt, MD, Oklahoma City
Camp S. Huntington, MD, Bartlesville
Alwyn T. Kornblee, MD, Tulsa
Otis S. Lee, MD, Tulsa
Herbert A. Masters, MD, Tahlequah
Robert P. Messinger, MD, Oklahoma City
Waldo B. Newell, Jr., MD, Enid
George L. Norris, MD, Bartlesville

Don H. O'Donoghue, MD, Oklahoma City
Earl M. Robinson, MD, Enid
Gerald Rogers, MD, Oklahoma City
Robert M. Shepard, Jr., MD, Tulsa
Joseph J. Smith, MD, Shattuck
Dale E. Van Wormer, MD, Tulsa

To be eligible for OSMA Life Membership, a physician must be a member in good standing of the association and must meet one or more of the following criteria: (a) be retired from the active practice of medicine because of ill health or age; (b) be engaged in the active practice of medicine for 50 or more years; (c) be 70 years of age. □

Doctoral Students Requested To Apply for Research Grants

Doctoral students whose dissertations address critical issues and problems in health services delivery are invited to apply for research grants from the National Center for Health Services Research (NCHSR).

Applications will be accepted until March 1, 1983, from doctoral candidates undertaking studies on the organization, delivery, and financing of health services. Applicants must have completed all but the dissertation requirement and must be enrolled in a doctoral program in the medical, social, management, or health sciences.

Each NCHSR grant for dissertation research is limited to \$20,000 in total direct costs, which may not be applied to tuition or fees. Funding decisions will be made by June 1983.

NCHSR sponsors doctoral dissertation research to stimulate innovative studies on current issues and problems in health services delivery and to encourage new health services researchers. Funding is provided as part of NCHSR's research program, which is the major source of federal support for general research on problems related to the quality and delivery of health services. NCHSR is part of the US Public Health Service.

Application procedures are described in "NCHSR Program Solicitation: Grants for Health Services Research Dissertations, 1983" (PHS) 83-3337. The brochure and application materials are available from the Grants Review Branch (Dissertations), NCHSR, Room 7-50A, Center Building, 3700 East-West Highway, Hyattsville, Maryland 20782, (301) 436-6920. □

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Deaths

HAROLD T. BAUGH, MD 1899 - 1982

Harold T. Baugh, MD, a Meeker general practitioner since 1945, died in Oklahoma City on December 28. Born in Clifton, Dr Baugh was graduated from the University of Oklahoma College of Medicine in 1930. He served as a missionary in Korea from 1931 to 1941. He was the son of the late John H. Baugh, MD, Meeker's first physician. Dr Baugh was a member of the board of directors of the American Lung Association of Oklahoma and a Life Member of the OSMA.

FRED C. BUFFINGTON, MD 1911 - 1983

Fred C. Buffington, MD, Norman physician for many years, died January 4. Born in Houston, Texas, Dr Buffington was graduated from the University of Oklahoma College of Medicine in 1935. His practice was established in Norman immediately following his internship in Wisconsin. Last year, the OSMA awarded Dr Buffington a Life Membership.

DEWEY K. RHEA, MD 1931-1983

Dewey K. Rhea, MD, 51-year-old Stigler physician, died in Joplin, MO, January 3. Born in Corbin, KY, Dr Rhea was graduated from the University of Arkansas School of Medicine in 1963. His practice was established in Stigler in 1965.

BERGET H. BLOCKSOM, MD 1907 - 1982

Retired Tulsa urologist, Berget H. Blocksom, MD, died December 26, 1982. A native of St Louis, Dr Blocksom had resided in Tulsa since 1945. He was graduated from Duke University School of Medicine in 1934. During World War II he served with the US Medical Corps. A Fellow of the American College of Surgeons, Dr Blocksom was also a Life Member of the Oklahoma State Medical Association. □

In Memoriam

1982

<i>Joseph F. Messenbaugh, MD</i>	<i>March 12</i>
<i>James Russell Kreger, MD</i>	<i>April 3</i>
<i>Boyd Vance Lucas, MD</i>	<i>April 9</i>
<i>Carlton E. Smith, MD</i>	<i>April 23</i>
<i>Ella H. Murray, MD</i>	<i>May 3</i>
<i>Loyd G. Williams, MD</i>	<i>May 15</i>
<i>A. A. Walker, MD</i>	<i>July</i>
<i>Wesley Russell Mote, MD</i>	<i>July 24</i>
<i>Thomas H. Fair, MD</i>	<i>August 15</i>
<i>Clyde E. Harris, MD</i>	<i>September 1</i>
<i>Tillman A. Ragan, MD</i>	<i>September 5</i>
<i>Floyd T. Hubbard, MD</i>	<i>September 23</i>
<i>William A. Eastland, MD</i>	<i>October 3</i>
<i>William J. Craig, MD</i>	<i>October 19</i>
<i>William M. Wood, MD</i>	<i>October 30</i>
<i>Hugh C. Graham, Sr., MD</i>	<i>November 11</i>
<i>John David Wilson, MD</i>	<i>November 11</i>
<i>Clinton Gallaher, MD</i>	<i>November 15</i>
<i>Bert F. Keltz, MD</i>	<i>November 30</i>
<i>Berget H. Blocksom, MD</i>	<i>December 26</i>
<i>Harold T. Baugh, MD</i>	<i>December 28</i>

1983

<i>Fred C. Buffington, MD</i>	<i>January 4</i>
<i>Dewey K. Rhea, MD</i>	<i>January 3</i>

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Black Lung Program Urges Doctors to Take Assignments

Oklahoma physicians who provide medical care to victims of black lung disease are being asked by the Federal Black Lung Program to accept assignment of benefits and to bill the program directly in order to assist elderly and disabled patients.

The Federal Black Lung Program is a workmen's compensation program created by the Federal Mine Safety and Health Act of 1969. As such, it is the primary payer for medical treatment of black lung and associated disorders.

In Oklahoma there are more than 1,300 retired miners receiving federal black lung benefits; the majority reside in LeFlore, Haskell, Latimer, Okmulgee, Pittsburg, and Tulsa counties. In some areas physicians have declined to accept assignment from the program or have automatically billed other insurance carriers. This has created a problem for beneficiaries who often are quite elderly and are unable to bill the program themselves.

The black lung program has streamlined its reimbursement procedures; claims are now processed through an automated system. The new system, developed by Electronic Data Systems (EDS), is far more efficient than the old one and promises a turnaround time commensurate with other insurance carriers.

To simplify the billing process, the program now requires the use of nationally recognized billing forms (the UB 82 for inpatient bills and the HCFA 1500 for outpatient charges). Bills should be submitted with ICD-9-CM Diagnosis and CPT IV Procedure coding. Complete instructions are contained in the *Provider Manual* issued recently with new provider numbers.

All bills should be sent to the new billing address: The Federal Black Lung Program, PO Box 34915, West Bethesda, Maryland 20817.

Billing assistance is available to physicians through a toll-free WATS line (1-800-638-7072) and through provider relations field representatives. The provider representative for Oklahoma is Susan Smith, who can be reached through the toll-free number or at (301) 234-6243. □



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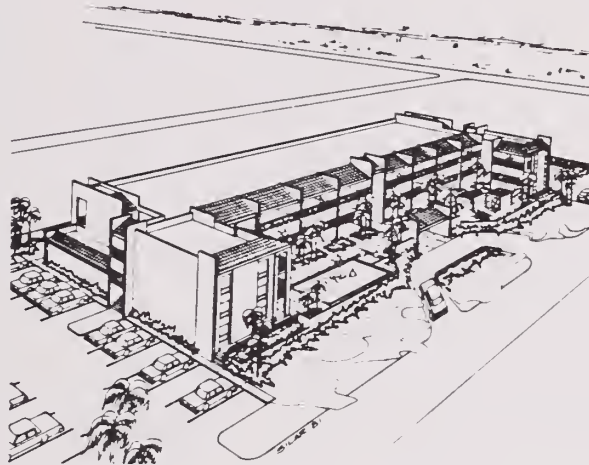
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Book Reviews

Davison of Duke: His Reminiscences. Edited by Jay M. Arena and John P. McGovern. Durham, NC: Duke University Medical Center, 1980. Pages 283, illustrated, \$25.00.

This is the story of Wilburt Cornell Davison, first dean and pediatrician at Duke University School of Medicine. These reminiscences have been assembled and edited by two students of Davison, Doctors Jay M. Arena and John P. McGovern. In addition to the reminiscences they have assembled approximately 100 pages of correspondence (primarily between Davison and the editors), obituaries and testimonials.

Davison, the son of a Methodist minister, was born in Michigan, April 28, 1892 but, after the age of five years, grew up on Long Island, New York. He entered Princeton in 1909 where he was an excellent student and a varsity athlete. He was awarded a Rhodes scholarship and spent from 1913 to 1916 at Oxford.

While there, he was advised about his studies by William Osler. Osler also guided his clinical work at the Radcliffe Infirmary. Upon Osler's recommendation, Davison was admitted as a fourth year student at Johns Hopkins Medical School in 1916. Davison was impressed by Professor John Howland at Hopkins and decided to become a pediatrician. However, his training was interrupted by World War I; he served as a medical officer from 1917-1919 in Europe.

Upon his discharge from military service, he returned to Baltimore to complete his pediatric house staff training at the Harriet Lane, home of Johns Hopkins. Here he was exposed to some of the leaders of American pediatrics. Davison subsequently became a member of Hopkins' faculty and an assistant dean under Lewis H. Weed. In 1924 he was appointed Dean and Professor of Pediatrics at the newly established Duke University Medical School in Durham, North Carolina. Here he was to remain until his death.

The story of the years at Durham provide not only much interesting and valuable information about Dr Davison but also about Duke University. It recounts many scenes from the developmental years of Duke, including the method and style of the buildings, recruitment of faculty, establishment of laboratories and the library. There are also accounts of Davison's relationship with various administrative officials at Duke including university presidents, hospital administrators and others.

As Davison had come from Johns Hopkins, he had been thoroughly indoctrinated in research activity. He attempted to combine his interest in investigation with the Duke Endowment provision to produce practitioners of high qualities for the Carolinas. Most of his residents entered private practice.

Davison was a wit and a student of humor. There are innumerable stories about his various experiences which are interlaced with humor. His favorite place was his summer home at Roaring Gap, North Carolina, 146 miles from Durham. There are numerous stories about his attempts at various avocations, his efforts to skirt prohibition and others.

Davison enjoyed history; he became the medical center's first historian and initiated its book collection in medical history.

These *Reminiscences* make good reading for anyone interested in Pediatrics, in Davison and in the history of Duke University. Davison's vital role in building Duke Medical Center comes through clearly.

Harris D. Riley, Jr., MD

Getting Better: A Medical Student's Story.

By Kenneth Klein. Boston: Little, Brown & Co., 1981. Pages 284, \$12.95.

This is the story of the author's sojourn through Harvard Medical School. Kenneth Klein writes that he had not wanted to be a physician when he enrolled at Harvard College; his initial intention was to major in chemistry or psychology. However, the advice of a professor that medical school was a good grounding for someone who wanted to do research in neurophysiology led him to apply for admission to medical school.

Getting Better recounts the events of those four years. It is a month-by-month and year-by-year account. It begins with certain pre-medical conflicts and ends with internship-matching day. In the introductory portion, the reader's interest is captured by the description of an episode at the City Hospital when the author was a third-year student and involved with a patient with a serious head injury who died. He then takes us on a tour, beginning with the basic science courses, which is accompanied by the universal impatience to "learn medicine," and then through introductory courses to clinical medicine. Klein is an entertaining guide to the exciting, arduous journey every medical student must undertake on the way to becoming a physician.

Following the preclinical years, he takes us through clerkships in obstetrics and gynecology, surgery, internal medicine, pediatrics, and various sub-specialty rotations. Bleak moments are balanced by happy ones. With humor and humility Klein chronicles his four year transformation from an "ordinary" young man into someone on the verge of becoming a competent physician. Two attitudes dominate, however; his lack of confidence, and death. Many pages are devoted to death — the frequency which he encountered it during school, the overriding fear that his lack of skill may have contributed to the death of a person who otherwise might have lived, and the gnawing anxiety that his ability would not prove up to the task of saving lives. For physicians who have been through the journey that Klein describes, there is much that is familiar. On the other hand some scenes are rather contrived. Based on Klein's description of it, one cannot help but raise certain questions about the rationale of at least portions of the medical curriculum.

During his fourth year, his happen-chance presence at the scene of an automobile accident was crucial in making possible the recovery of the injured victim. His confidence thus bolstered, at book's end he enthusiastically contemplates internship and a new life in the west.

Dr Klein is now a fellow in gastroenterology and instructor in medicine at the University of Oregon Medical Center. The book is written in a personal fashion, and much of it is anecdotal. It is an entertaining chronicle.

Harris D. Riley, Jr., MD

The Children's Ward. By Howard L. Weiner. New York: G. P. Putnam, 1980. Pages 264. Price \$11.95.

This is a novel which chronicles a week in the life of a resident in pediatric neurology (Alex Licata) at a children's medical center. As a broader background it paints a picture of academic medicine within this clinical context. As the title suggests, the story revolves around a children's ward in the hospital and a small number of patients with various neurological disorders. The cast of characters include medical students, nurses, house officers, fellows, full-time faculty, practicing physicians and visiting professors.

The author, an associate professor of neurology at Harvard Medical School, is well-versed in his subject and obviously has been at the scene himself.

The action is fast-moving and there are both good and shabby moments. The professional and personal life of the central figure is in up-

heaval throughout the story. In addition to the daily crises of his patients, he is faced with choosing between the lucrative world of private practice and that of academic medicine, between his wife and family and his attractions to another girl, and certain knotty other quandaries.

There are some features which do not quite ring true. In view of the author's background, it is to be expected that neurology would occupy the dominant role. However, the role played by certain major services is surprisingly superficial and in some cases quite unrealistic. In most children's medical centers neurology is not a primary but a consulting service. There are certain technical errors in the medical descriptions and the discussion of some day-to-day occurrences is somewhat sophomoric.

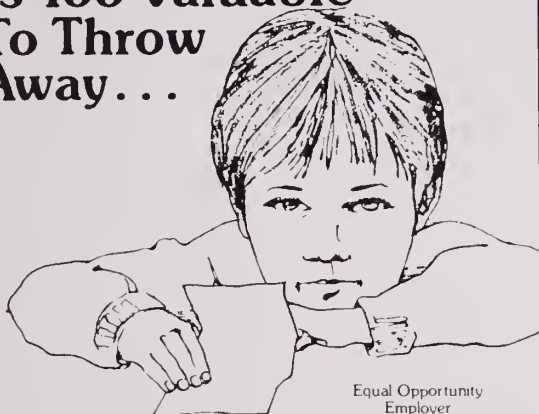
Anyone with an interest in medicine will find the story interesting. The characters are familiar to us all. One can only wish they had more depth and that the portrayal of academic life was more realistic. *Harris D. Riley, Jr., MD* ☐

Miscellaneous Advertisements

FOR SALE: Hamilton examining tables and matching cabinets; one adult, two peds with built-in scales; good condition. Assistant chairs, reception furniture. Nancy Craig, MD, PO Box 18427, Oklahoma City, OK 73154.

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Warnings

Usage in Pregnancy Reproduction studies have been performed in animals and there was no evidence of propensity for harm to the fetus. The relevance to the human is not known.

There is no experience in pregnant women who have received this drug.

The drug has not been extensively studied in children under two years; therefore, in the treatment of children under the age of two years, the relative benefit/risk should be considered.

Precautions

Minor transient elevations of SGOT have occurred in a small percentage of patients. Therefore, this drug should be used with caution in patients with pre-existing liver dysfunction.

Adverse Reactions

The most frequently encountered adverse reactions are related to the gastrointestinal system. Gastrointestinal and hepatic reactions: anorexia, nausea, vomiting, gastralgia, abdominal cramps, diarrhea and tenesmus, transient elevation of SGOT.

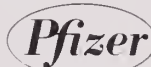
CNS reactions: headache, dizziness, drowsiness, and insomnia. Skin reactions: rashes.

Dosage and Administration

Children and Adults Antiminth Oral Suspension (50 mg of pyrantel base/ml) should be administered in a single dose of 11 mg of pyrantel base per kg of body weight (or 5 mg/lb.); maximum total dose 1 gram. This corresponds to a simplified dosage regimen of 1 ml of Antiminth per 10 lb. of body weight. (One teaspoonful = 5 ml.)

Antiminth (pyrantel pamoate) Oral Suspension may be administered without regard to ingestion of food or time of day, and purging is not necessary prior to, during, or after therapy. It may be taken with milk or fruit juices.

References 1. Pitts NE, Migliardi JR: *Clinical Pediatrics* 13:87, 1974. 2. Modell W: *Drugs of Choice* 1980-1981. C. V. Mosby Co., St. Louis, 1980, p. 362. 3. Goodman LS, Gilman A: *The Pharmacologic Basis of Therapeutics*, 6th edition, MacMillan Publishing Co., Inc., New York, 1980, p. 1032.



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S. pneumoniae

Brief Summary. Consult the package literature for prescribing information.

Indications and Usage: Cefclor® (cefclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococcus).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

Contraindication: Cefclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS: CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

Precautions: General Precautions.—If an allergic reaction to Cefclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Cefclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Usage in Pregnancy—Pregnancy Category B—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Cefclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response this drug should be used during pregnancy only if clearly needed.

Nursing Mothers—Small amounts of Cefclor have been detected in mother's milk following administration of single 500-mg doses.

Average levels were 0.16, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one

Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Cefclor.¹⁻⁶

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefclor.⁷

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cefclor

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hour. The effect on nursing infants is not known. Caution should be exercised when Cefclor® (cefclor, Lilly) is administered to a nursing woman.

Usage in Children—Safety and effectiveness of this product for use in infants less than one month of age have not been established.

Adverse Reactions: Adverse effects considered related to therapy with Cefclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100), pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis, arthralgia, and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[061782R]

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.⁸

Note: Cefclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

References
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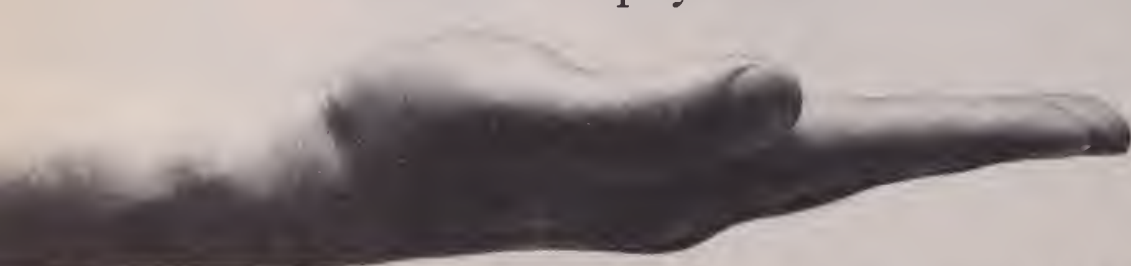
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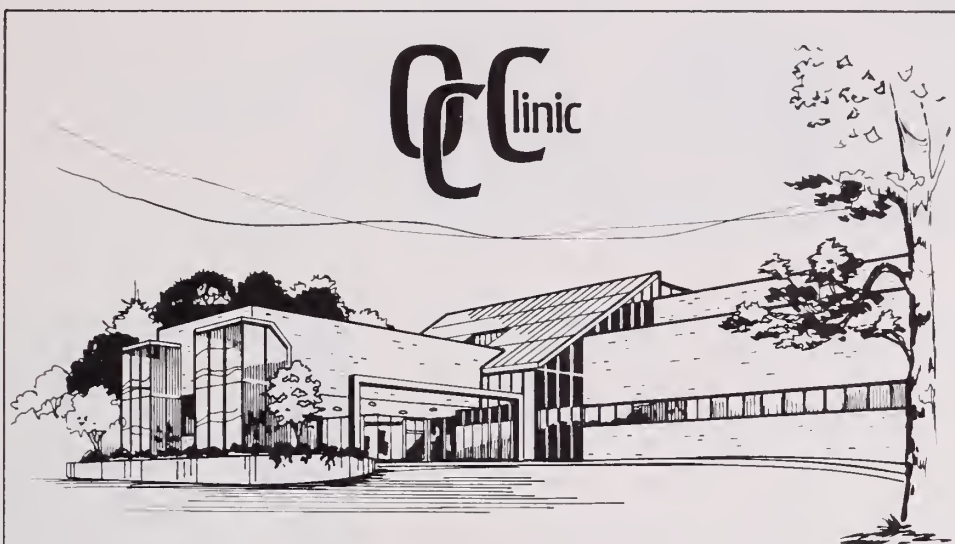
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INDICATIONS AND USAGE: Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in the long-term management of these diseases. Safety and effectiveness have not been established for Functional Class IV rheumatoid arthritis.

Relief of mild to moderate pain. Treatment of primary dysmenorrhea.

CONTRAINDICATIONS: Patients hypersensitive to ibuprofen, or with the syndrome of nasal polyps, angio-edema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory drugs (see WARNINGS).

WARNINGS: Anaphylactoid reactions have occurred in patients hypersensitive to aspirin (see CONTRAINDICATIONS). Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Peptic ulceration, perforation, or gastrointestinal bleeding can end fatally, however, an association has not been established. Rufen should be given under close supervision to patients with a history of upper gastrointestinal tract disease, and only after consulting the ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be attempted. If Rufen must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

PRECAUTIONS: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If developed, discontinue Rufen and administer an ophthalmologic examination.

Fluid retention and edema have been associated with Rufen; caution should be used in patients with a history of cardiac decompensation.

Rufen can inhibit platelet aggregation and prolong bleeding time. Use with caution in patients with intrinsic coagulation defects and those taking anticoagulants.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy, this therapy should be tapered slowly when adding Rufen.

DRUG INTERACTION: Coumarin-type anticoagulants. The physician should be cautious when administering Rufen to patients on anticoagulants.

Aspirin. Concomitant use may decrease Rufen blood levels.

PREGNANCY AND NURSING MOTHERS: Rufen should not be taken during pregnancy nor by nursing mothers.

ADVERSE REACTIONS: Incidence greater than 1%. **Gastrointestinal:** The most frequent adverse reaction is gastrointestinal (4 to 16%). Includes nausea*, epigastric pain*, heartburn*, diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence). **Central Nervous System:** dizziness*, headache, nervousness. **Dermatologic:** rash* (including maculopapular type), pruritus. **Special Senses:** tinnitus. **Metabolic:** decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

*Incidence 3% to 9%.

Incidence less than 1 in 100. Gastrointestinal: gastric or duodenal ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma. **Dermatologic:** vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome and alopecia. **Special Senses:** hearing loss, amblyopia (blurred and/or diminished vision, scotomata and/or changes in color vision) [see PRECAUTIONS]. **Hematologic:** neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs' positive), thrombocytopenia with or without purpura eosinophilia, decreases in hemoglobin and hematocrit. **Cardiovascular:** congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Allergic:** syndrome of abdominal pain, fever, chills, nausea and vomiting, anaphylaxis, bronchospasms (see CONTRAINDICATIONS). **Renal:** acute renal failure in patients with preexisting significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria. **Miscellaneous:** dry eyes and mouth, gingival ulcers, rhinitis.

Causal relationship unknown. Gastrointestinal: pancreatitis. **Central Nervous System:** paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri. **Dermatologic:** toxic epidermal necrolysis, photo-allergic skin reactions. **Special Senses:** conjunctivitis, diplopia, optic neuritis. **Hematologic:** bleeding episodes. **Allergic:** serum sickness, lupus erythematosus syndrome, Henoch-Schönlein vasculitis. **Endocrine:** gynecomastia, hypoglycemia. **Cardiovascular:** arrhythmias (sinus tachycardia, bradycardia, and palpitations). **Renal:** renal papillary necrosis.

OVERDOSAGE: Acute overdosage, the stomach should be emptied. Rufen is acidic and excreted in the urine, alkaline diuresis may benefit.

DOSEAGE AND ADMINISTRATION: Rheumatoid arthritis and osteoarthritis, including flareups of chronic disease: Suggested dosage 400 mg t.i.d. or q.i.d.

Dysmenorrhea: 400 mg every 4 hours as necessary

Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for the relief of pain. Do not exceed 2,400 mg per day.

CAUTION: Federal law prohibits dispensing without prescription.

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Index to Advertisers

American Medi-Lease	ii
The Arthritis Clinic	xix
Boots Pharmaceuticals, Inc.iv, v, xxv, xxvi	
Burroughs Wellcome Co.	xii
The Chickasha Clinic	xix
City of Faith	i
Country View	xxiii
C. L. Frates & Co., Inc.	55
CSI Properties	59
Eli Lilly Industries, Inc.	x
Glass-Nelson Clinic	xx
Harsha Orthopedic, Inc.	xxix
McAlester Clinic	xx
Medical Arts Clinic of Ardmore	xxi
Medical Arts Laboratory	xxi
Oklahoma Allergy Clinic	xxii
Oklahoma City Clinic	xvii
Oklahoma Hand Surgery Center, Inc.	xxiv
Oklahoma Plastic & Reconstructive Surgeons, Inc.	xxiv
Orthopedic & Arthritis Center	xxii
Oklahoma Cardiovascular & Thoracic Surgery Associates, Inc.	xvi
OSMA Group Life Insurance Trust	vi
Pension Consultants, Inc.	58
Pfipharmecs, Inc.	viii, ix
Plastic & Reconstructive Surgery Clinic, Inc.	xxiv
PLICO	inside front cover
Raphael Center Hospital	vii
Roche Laboratories	covers, xiii, xiv
Shawnee Medical Center Clinic, Inc.	xxiii
Staff Leasing, Inc.	xv
Tulsa Adjustment Bureau, Inc.	56
The Upjohn Company	xi
Urological and Genitourinary Surgery	xxix
Willow View Hospital	xviii
Wilshire Garden Office Park	57

The JOURNAL

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NEWS

Members of the Oklahoma State Medical Association, the constituent societies of the association, and all readers in general are invited to supply news items of general interest to the profession.

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All advertising copy must be approved by the Editorial Board before acceptance for publication. General and miscellaneous advertising rates will be sent on request.

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The Editorial Board reserves the prerogative to submit contributions to a Medical Editing Service when warranted. If such is felt necessary, the Editor will contact the author for approval, informing him that there will be a modest charge for this service.

REPRINTS

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BACK ISSUES

Microfilm copies of back issues of *The Journal* may now be purchased from University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

A Network of Volunteers

Ask any auxilian what characteristic best epitomizes auxiliary's function to her and an almost universal answer would be "Volunteerism," for that is the role that most of us play in this organization we call medical auxiliary.

This past year marks the 60th anniversary of our national organization founded to support the American Medical Association in its activities and programs. Ours is a history of evolving to constantly meet the needs of our medical societies and local communities.

Our immediate past-national president, Isobel Dvorsky, summed up an image of the auxiliary as, "An organization unique in myriad volunteer achievement, in ability to change and grow as circumstances demand, in grassroot involvement to meet all manner of community needs, a democratic structure which permits every member a voice."

As Mrs Dvorsky's presidency continued and President Reagan launched his campaign for citizen volunteerism and involvement because of federal cutbacks, volunteerism became her credo. To auxiliaries across the nation the call went out for renewed emphasis on volunteerism. State presidents carried this message to their county auxiliaries as they traveled about their states. Newsletters, *Facets* magazine, seminars and convention re-echoed the theme.

Did auxiliaries take up the gauntlet? What sort of response met the challenge and what have been some of the accomplishments of the past year?

First and foremost of our National efforts was the dollars increase in our donation to AMA-ERF, a contribution of \$1,742,913.68 reflecting \$50,000 above the former figure. A significant portion of this was raised through projects, auctions, bazaars, boutiques and raffles. Certainly these dollars echo our abiding interest in the education of our medical students and in supplying funds for research and scientific equipment which indirectly affects us all and thereby the quality of life and medicine in our local communities.

Other notable health projects capturing the energy and enthusiasm of auxilians were the Organ Donation Awareness Week Program and involvement in anti-drinking legislation. In the first instance, promoting better education on behalf of the public and media on this sensitive subject auxilians provided brochures, speak-

ers bureaus, and local workshops with state organ donation participants. On the latter project, auxilians in Maryland and other states acted as a catalyst, writing letters, giving testimony on pertinent bills and visiting legislators. Providing factual information, statistics and forming coalitions with other groups they succeeded in affecting legislation relating to raising the drinking age from 18 back to 21 and seeing laws more strictly enforced regarding drunk driving.

In Iowa, a program on deaf-awareness was instituted because of the special communication skills of one of its auxiliary members. Kansas auxilians implemented a "Mother's Morning Out" program designed to prevent child abuse; mothers were provided with enrichment programs with hints on economics, cooking, and child health while care was provided for their little ones.

Forming coalitions with other groups, auxilians across the country aided in establishing Ronald McDonald homes for the use of the families of very ill children; and here in Oklahoma auxilians in all areas of the state have participated in fund-raisers for Hospice, have acted as volunteer helpers and even served as members of the local Hospice board. The list of contributions of personal time and effort is endless.

Has the call to volunteerism been heard? One must reply a resounding yes! But for us the job is just beginning. As our current president Betty Payne tells us, "We are on the threshold of new opportunities. We must show all other nations what can be accomplished with unity and with America's most valued asset — the spirit of volunteerism upon which this country was built."

In Oklahoma, your state medical auxiliary encourages your involvement and applauds your efforts. We ask for a continuation of your energy and enthusiasm and will promise you the expertise to accomplish your goals. Let's forge ahead together, freely giving of our time and talents for the good of others.

— Betty Edge, State President, OSMAA

In a ceremony honoring Oklahoma City physician Moorman Prosser, MD, Governor George Nigh proclaimed December 28, 1982, as Moorman Prosser Day. The proclamation was presented to Dr Prosser in recognition of his service to Oklahoma City residents, his dedication to training medical students, and his contributions to the field of medicine. Dr Prosser is a clinical professor of psychiatry and behavioral sciences at the University of Oklahoma College of Medicine and serves on the staffs of several area hospitals. The proclamation honoring Dr Prosser was presented to him by Jeanette Edmondson, Oklahoma Secretary of State.

The American Diabetes Association Eastern Oklahoma Chapter has created the Robert K. Endres Foundation for diabetes research in honor of Tulsa physician Robert K. Endres, MD. The association also presented Dr Endres with its first annual plaque honoring an individual's outstanding service in the field of diabetes education and care. Dr Endres founded the first camp in Oklahoma for diabetic children (Camp O'Leary) in 1976 and helped establish a day camp in eastern Oklahoma in 1977. He was instrumental in developing a device that allows an insulin needle to be permanently inserted into the body and easily concealed by the wearer. Since 1981 Dr Endres has served as chairman of the Board of Eastern Oklahoma Chapter of the American Diabetes Association.

The Southwest Chapter of the American College of Utilization Review Physicians will conduct a seminar titled "Pharmacology and Quality Assurance" at the AMFAC Hotel, Dallas/Fort Worth Airport, on Friday, March 4, 1983. The program will include a survey on the use of antibiotics, analgesics, and intravenous fluids. Speakers confirmed to date are Edward

H. Wiseman, PhD, Central Research Division, Pfizer, Inc. Medical Research Laboratory; Joan Mary Roberts, MD, director of the Office of Quality Assurance, Chestnut Hill Hospital, Philadelphia; and Fred Lucas, MD, president of NHIC of Austin, Texas. Cost of the seminar is \$65 for members and \$75 for nonmembers.

Four Oklahoma physicians have been elected to fellowship in the American College of Chest Physicians (ACCP). They are Lofty L. Basta, MD, Tulsa; Linda F. Deere, MD, Oklahoma City; David C. Levin, MD, Oklahoma City; and Donald R. McCaffree, MD, Oklahoma City. The ACCP is an 11,000-member international, multidisciplinary medical organization.

The American Academy of Allergy and Immunology (AAAI) has prepared a 194-page document to serve as an authoritative and concise learning tool for medical students, residents, and clinical practitioners.

The *Primer on Allergic and Immunologic Diseases*, first published in the November 26 issue of the *Journal of the American Medical Association*, is a state-of-the-art report covering the full dimensions of allergic and immunologic diseases and their treatments. It includes sections on food allergy, common allergic skin diseases, adverse reactions to drugs and insect stings, asthma and hay fever, and immunotherapy. As a public service, the AAAI and the National Institute of Allergy and Infectious Diseases will provide complimentary copies of the *Primer* to third- and fourth-year medical students in all United States and Canadian medical schools. Single copies are available at the cost of \$10 from AAAI, 611 East Wells Street, Milwaukee, Wisconsin 53202. □

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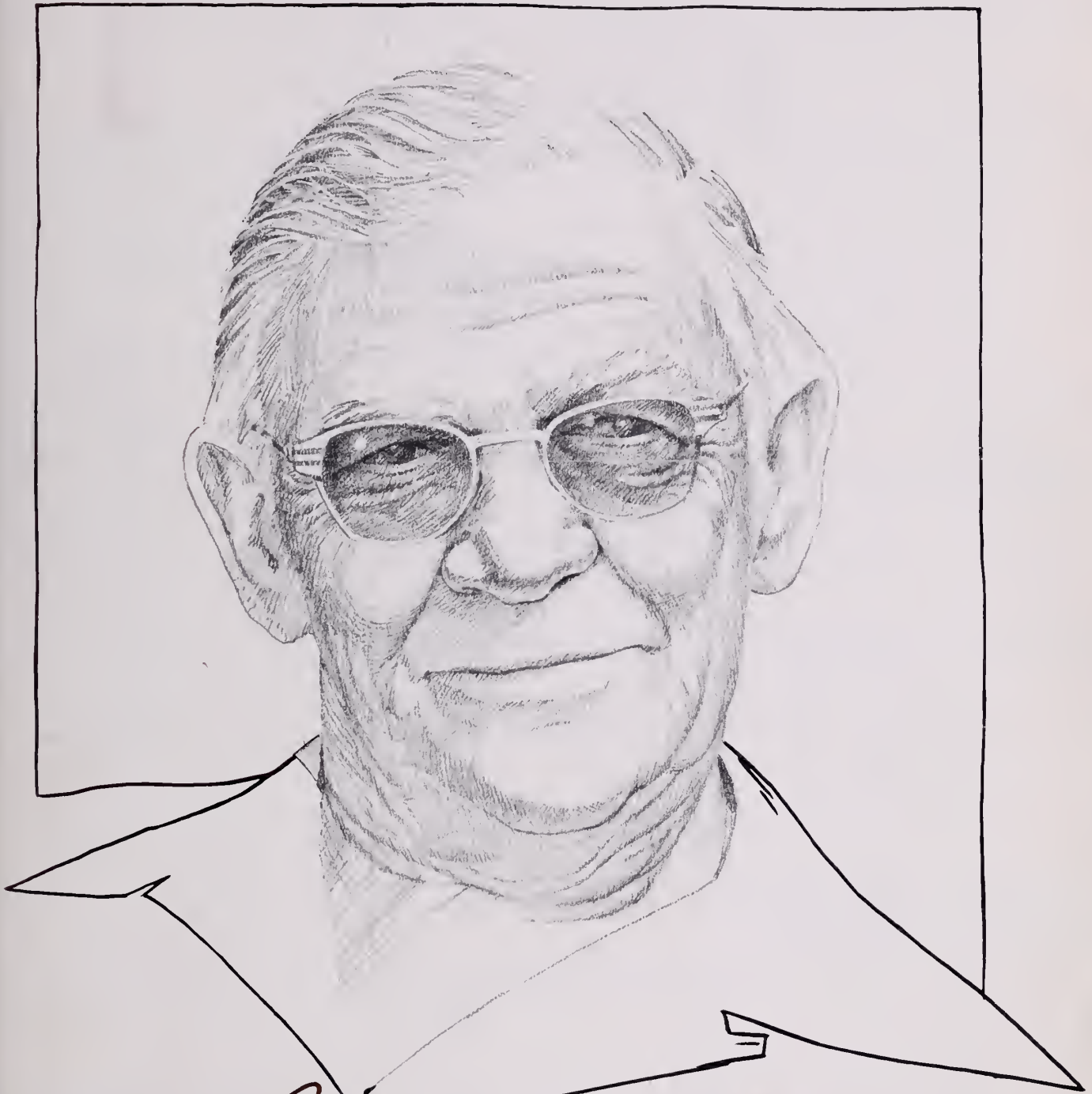


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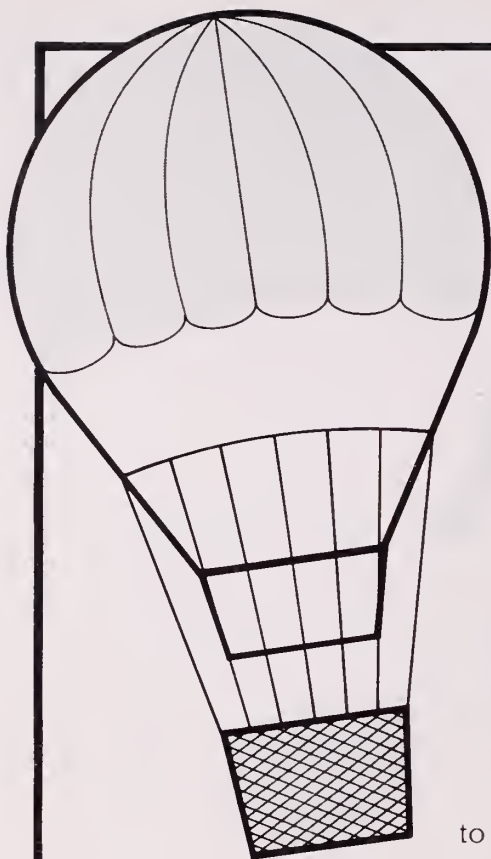
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JOURNAL *Oklahoma State Medical Association*



Leaders in Medicine



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JOURNAL

Oklahoma State Medical Association

MARCH, 1983

Vol. 76, No. 3

CONTENTS

- 61 Invisible Time and Rising Costs
- 62 President's Page
- 63 Leaders in Medicine—Bruce R. Hinson, MD, *Judy Leitner*
- 70 Shigellosis Complicated By Klebsiella Sepsis,
Mel Clark, MD, Mark Moran, MD and Harold G. Much-
more, MD
- 73 Postmortems and the Growth of Modern Medical Know-
ledge in 19th Century Europe, *Vincent J. Knapp, PhD*
- 77 The Oklahoma State Department of Health
- 79 OSMA Sends Annual Meeting Program and Hotel Infor-
mation
- 79 Sculpture Display and Raffle Set for OSMA Annual Meet-
ing
- 79 PLICO Health Enrollment Up, Wellness Bonuses on the
Way
- 79 AMA Conference to Examine Prevention of Disabilities
- 81 Plans Announced to Administer New Foreign
Grad Exam in 1984
- 81 Death
- 83 Reaction Time
- 83 Informative Seminars Mark National Nutrition Month
- 84 Book Review
- 84 Miscellaneous Advertisements
- xxxvi Index to Advertisers
- xxxvii Auxiliary
- xxxviii The Last Word

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The Journal of the Oklahoma State Medical Association (USPS 285-000)

CALL FOR RESOLUTIONS

All resolutions to be presented to the Oklahoma State Medical Association House of Delegates annual meeting must be received in the executive office no later than thirty (30) days prior to the meeting. This year's meeting will be held May 4-7, 1983 at the Excelsior Hotel, Tulsa, Oklahoma.

County medical societies or individuals wishing to submit resolutions should mail them to OSMA, 601 NW Expressway, Oklahoma City, OK 73118. Should you need assistance in drafting such resolutions, please contact the executive offices.

SUBMIT YOUR
RESOLUTIONS
ON OR BEFORE

April 4, 1983.

BRIEF SUMMARY PROCARDIA® CAPSULES (nifedipine)

For Oral Use

INDICATIONS AND USAGE: I. **Vasospastic Angina:** PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria: 1) classical pattern of angina at rest accompanied by ST segment elevation, 2) angina or coronary artery spasm provoked by ergonovine, or 3) angiographically demonstrated coronary artery spasm. In those patients who have had angiography, the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina, provided that the above criteria are satisfied. PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed, e.g., where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm, or when angina is refractory to nitrates and/or adequate doses of beta blockers.

II. **Chronic Stable Angina (Classical Effort-Associated Angina):** PROCARDIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or organic nitrates or who cannot tolerate those agents.

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete.

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina, but available information is not sufficient to predict with confidence the effects of concurrent treatment, especially in patients with compromised left ventricular function or cardiac conduction abnormalities. When introducing such concomitant therapy, care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs. (See Warnings.)

CONTRAINDICATIONS: Known hypersensitivity reaction to PROCARDIA.

WARNINGS: Excessive Hypotension: Although in most patients, the hypotensive effect of PROCARDIA is modest and well tolerated, occasional patients have had excessive and poorly tolerated hypotension. These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment, and may be more likely in patients on concomitant beta blockers.

Severe hypotension and/or increased fluid volume requirements have been reported in patients receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia. The interaction with high dose fentanyl appears to be due to the combination of PROCARDIA and a beta blocker, but the possibility that it may occur with PROCARDIA alone, with low doses of fentanyl, in other surgical procedures, or with other narcotic analgesics cannot be ruled out.

Increased Angina: Occasional patients have developed well documented increased frequency, duration or severity of angina on starting PROCARDIA or at the time of dosage increases. The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate, or from increased demand resulting from increased heart rate alone.

Beta Blocker Withdrawal: Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina, probably related to increased sensitivity to catecholamines. Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release. There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation. It is important to taper beta blockers if possible, rather than stopping them abruptly before beginning PROCARDIA.

Congestive Heart Failure: Rarely, patients, usually receiving a beta blocker, have developed heart failure after beginning PROCARDIA. Patients with tight aortic stenosis may be at greater risk for such an event.

PRECAUTIONS: General: **Hypotension:** Because PROCARDIA decreases peripheral vascular resistance, careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested. Close observation is especially recommended for patients already taking medications that are known to lower blood pressure. (See Warnings.)

Peripheral edema: Mild to moderate peripheral edema, typically associated with arterial vasodilation and not due to left ventricular dysfunction, occurs in about one in ten patients treated with PROCARDIA. This edema occurs primarily in the lower extremities and usually responds to diuretic therapy. With patients whose angina is complicated by congestive heart failure, care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction.

Drug interactions: Beta-adrenergic blocking agents: (See Indications and Warnings.) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated, but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure, severe hypotension or exacerbation of angina.

Long-acting nitrates: PROCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination.

Digitalis: Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers. The average increase was 45%. Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease. In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured, digitalis toxicity was not observed. Since there have been isolated reports of patients with elevated digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing PROCARDIA to avoid possible over- or under-digitalization.

Carcinogenesis, mutagenesis, impairment of fertility: When given to rats prior to mating, nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose.

Pregnancy: Category C. Please see full prescribing information with reference to teratogenicity in rats, embryotoxicity in rats, mice and rabbits, and abnormalities in monkeys.

ADVERSE REACTIONS: The most common adverse events include dizziness or light-headedness, peripheral edema, nausea, weakness, headache and flushing each occurring in about 10% of patients, transient hypotension in about 5%, palpitation in about 2% and syncope in about 0.5%. Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antianginal medication. Additionally, the following have been reported: muscle cramps, nervousness, dyspnea, nasal and chest congestion, diarrhea, constipation, inflammation, joint stiffness, shakiness, sleep disturbances, blurred vision, difficulties in balance, dermatitis, pruritus, urticaria, fever, sweating, chills, and sexual difficulties. Very rarely, introduction of PROCARDIA therapy was associated with an increase in anginal pain, possibly due to associated hypotension.

In addition, more serious adverse events were observed, not readily distinguishable from the natural history of the disease in these patients. It remains possible, however, that some or many of these events were drug related. Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2%. Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0.5% of patients.

Laboratory Tests: Rare, mild to moderate, transient elevations of enzymes such as alkaline phosphatase, CPK, LDH, SGOT, and SGPT have been noted, and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy. The relationship to PROCARDIA therapy is uncertain. These laboratory abnormalities have rarely been associated with clinical symptoms. Cholestasis, possibly due to PROCARDIA therapy, has been reported twice in the extensive world literature.

HOW SUPPLIED: Each orange, soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedipine. PROCARDIA CAPSULES are supplied in bottles of 100 (NDC 0069-2600-66), 300 (NDC 0069-2600-72), and unit dose (10x10) (NDC 0069-2600-41). The capsules should be protected from light and moisture and stored at controlled room temperature 59° to 77°F (15° to 25°C) in the manufacturer's original container.

More detailed professional information available on request

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*"My daily routine consisted of
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*"My doctor switched me to
PROCARDIA[*] as soon as it became
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is remarkable."*

*"I shop, cook and can plant
flowers again."*

*"I have been able to do volunteer
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once again."*

PROCARDIA can mean the return to a more normal life for
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once again.

Side effects are usually mild (most frequently reported are
dizziness or lightheadedness, peripheral edema, nausea,
weakness, headache and flushing, each occurring in about 10%
of patients, transient hypotension in about 5%, palpitation in
about 2% and syncope in about 0.5%).

*Quotes from an unsolicited
letter received by Pfizer from an
angina patient. While this patient's experience
is representative of many
unsolicited comments received
not all patients will respond to
Procordia nor will they all
respond to the same degree.*

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for the varied faces of angina

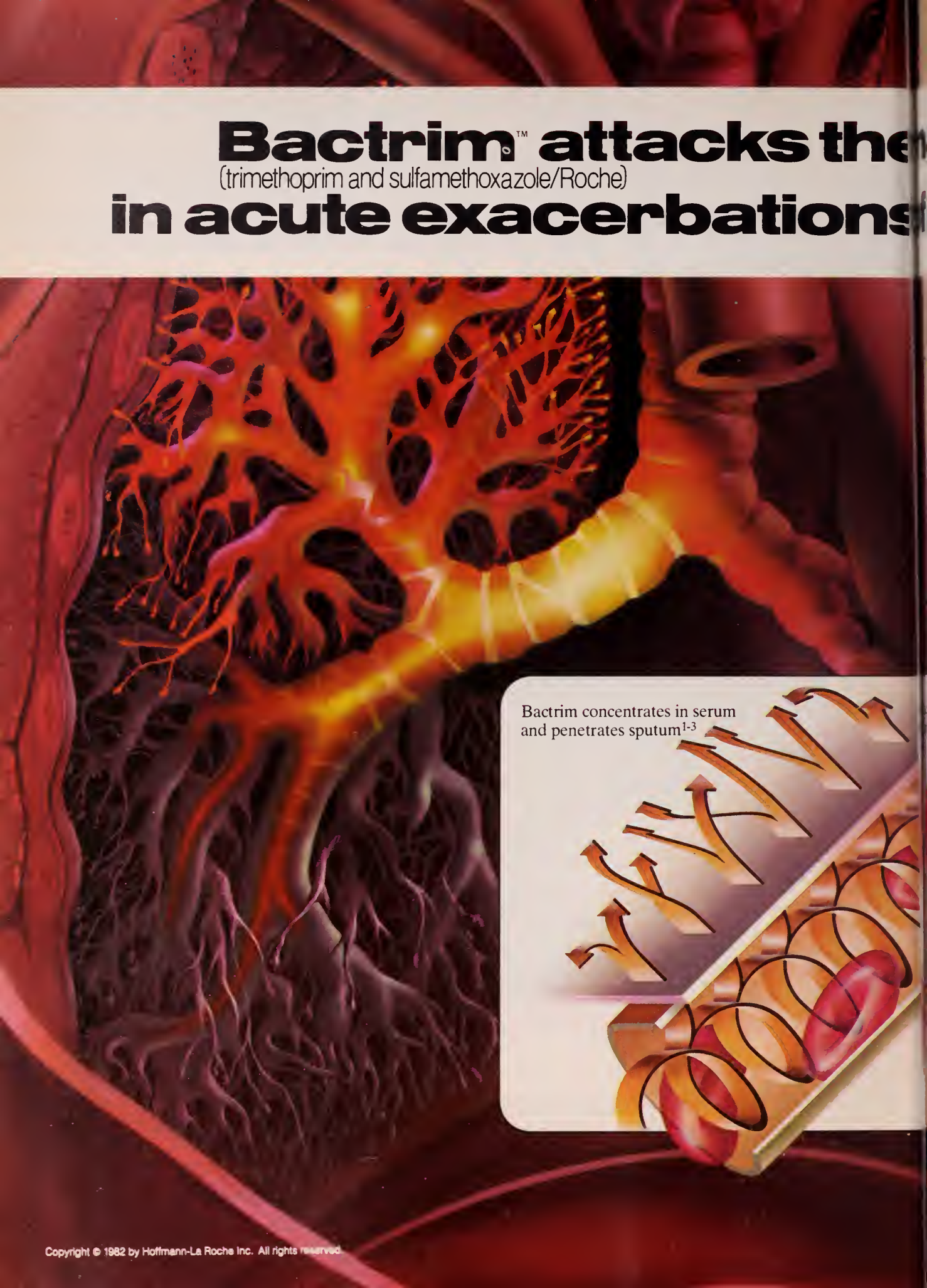
PROCARDIA[®] **(NIFEDIPINE)** Capsules 10 mg

* Procordia is indicated for the management of:

- 1) Confirmed vasospastic angina.
- 2) Angina where the clinical presentation suggests a possible vasospastic component.
- 3) Chronic stable angina without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or nitrates or who cannot tolerate these agents. In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks' duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in these patients are incomplete.

Please see PROCARDIA brief summary on adjoining page.

Bactrim[™] attacks the (trimethoprim and sulfamethoxazole/Roche) **in acute exacerbations**



Bactrim concentrates in serum
and penetrates sputum¹⁻³



major pathogens of chronic bronchitis*

Bactrim clears sputum of susceptible bacteria

In sputum cultures from patients with acute exacerbations of chronic bronchitis, *H. influenzae* and *S. pneumoniae* are isolated more often than any other pathogens.^{4,5} One study of transtracheal aspirates from 76 patients with acute exacerbations found that 80% of the isolates were of these two pathogens.⁵

Bactrim is effective *in vitro* against most strains of both *S. pneumoniae* and *H. influenzae*—even ampicillin-resistant strains. And in acute exacerbations of chronic bronchitis involving these two pathogens, sputum cultures taken seven days after a two-week course of therapy showed that Bactrim eradicated these bacteria in 91% (50 of 55) of the patients treated.⁶

Bactrim reduces coughing and sputum production

In three double-blind comparisons with ampicillin *q.i.d.*, Bactrim DS proved equally effective on all clinical parameters.^{7,9} Bactrim reduced the frequency and severity of coughing, reduced the amount of sputum produced and cleared the sputum of purulence.

Bactrim has the added advantages of *b.i.d.* dosage convenience and a lower incidence of diarrhea than with ampicillin, and it is useful in patients allergic to penicillins.

Bactrim also proved more effective than tetracyclines in 10 clinical trials

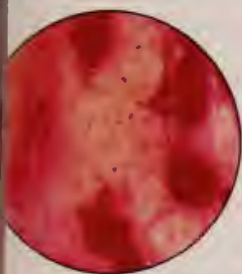
involving nearly 700 patients.¹⁰ Overall clinical condition of the patients, changes in sputum purulence, reduction in sputum volume and microbiological clearance of pathogens—all improved more with Bactrim therapy than with tetracyclines. G.I. side effects occurred in only 7% of patients treated with Bactrim compared with 12% of tetracycline-treated patients. (See Adverse Reactions in summary of product information on next page.)

Bactrim is contraindicated in pregnancy at term and nursing mothers, infants under two months of age, documented megaloblastic anemia due to folate deficiency and hypersensitivity.

Bactrim DS. For acute exacerbations of chronic bronchitis in adults* when it offers an advantage over single-agent antibacterials.

References: 1. Hughes DTD, Bye A, Hodder P: *Adv Antimicrob Antineoplastic Chemother* 1/2:1105-1106, 1971. 2. Jordan GW et al: *Can Med Assoc J* 112:91S-95S, Jun 14, 1975. 3. Beck H, Pechere JC: *Prog Antimicrob Anticancer Chemother* 1:663-667, 1969. 4. Quintiliani R: Microbiological and therapeutic considerations in exacerbations of chronic bronchitis, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts*; Princeton Junction, NJ, Communications Media for Education, Inc., 1980, pp. 9-12. 5. Schreiner A et al: *Infection* 6(2):54-56, 1978. 6. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 7. Chodosh S: Treatment of acute exacerbations of chronic bronchitis: results of a double-blind crossover clinical trial, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts*. *Op. cit.*, pp. 15-16. 8. Chervinsky P: Double-blind clinical comparisons between trimethoprim-sulfamethoxazole (Bactrim™) and ampicillin in the treatment of bronchitic exacerbations. *Ibid.*, pp. 17-18. 9. Dulfano MJ: Trimethoprim-sulfamethoxazole vs. ampicillin in the treatment of exacerbations of chronic bronchitis. *Ibid.*, pp. 19-20. 10. Medici TC: Trimethoprim-sulfamethoxazole (Bactrim™) in treating acute exacerbations of chronic bronchitis: summary of European clinical experience. *Ibid.*, pp. 13-14.

attacks *H. influenzae*—even ampicillin-resistant strains



attacks *S. pneumoniae*



**Economical
b.i.d.**

Bactrim™ DS

(160 mg trimethoprim and 800 mg sulfamethoxazole/Roche)

*Due to susceptible organisms. Please see next page for summary of product information.

BactrimTM

(trimethoprim and sulfamethoxazole/Roche)

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli*, *Klebsiella-Enterobacter*, *Proteus mirabilis*, *Proteus vulgaris*, *Proteus morganii*. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. *Note:* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections. For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age. For acute exacerbation of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent. For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonia.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides, patients with documented megaloblastic anemia due to folate deficiency, pregnancy at term, nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL

PHARYNGITIS. Clinical studies show that patients with group A β -hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hemopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: General: Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.

Pregnancy: Teratogenic Effects. Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions:* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea, pseudomembranous colitis and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarthritis nodosa and LE phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: Not recommended for infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS

Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp (20 ml) b.i.d. for 14 days.

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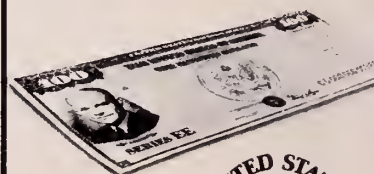
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Invisible Time and Rising Costs

Despite prevailing practices in determining fees and reimbursing physicians for professional services, the amount of time a physician spends doing what he does represents, ultimately, what he must charge for those services. Unfortunately, this fact makes it necessary for us to charge our patients for all of the time we spend doing things which are essential to our viability as a practicing physician but which are not devoted to the individual needs of a particular patient. Such time is ignored by insurance programs, invisible to patients and unrecognized by the public. Many physicians consider it wasted time, but hospital administrators and the bureaucrats queued up behind them consider it more important than the time we spend talking to patients. Physicians' families view it as time that should be shared with them — but isn't. The civic leader believes it is time which the physician owes his community and the loan officer at the bank appraises it as non-income generating time.

However it is perceived, such time is taken from the physician's day. It is spent. It is gone. It is not paid for by the hospital or the bureaucrat or the insurance company or the professional society or the civic organization. It is paid for, of course, by the patient — whose only benefit from it is indirect at best. Every hour of invisible time from a physician's day increases the cost of his patients' medical care. And every year the amount of the physician's time which becomes invisible grows by minutes and hours.

Invisible is the time spent attending hospital staff and committee meetings; reading and preparing replies to insurance underwriters' inquiries; completing forms for licenses and certificates; dictating and signing discharge summaries; writing prescriptions for new drugs to replace withdrawn combinations or satisfy renewal requirements; serving as an educator on a faculty or with hospital staff in-

service programs; working with volunteer health groups, free clinics, youth programs and civic organizations; negotiating rejected claims with patients and their insurance carriers; reviewing and signing orders sent every month by nursing homes caring for our patients; reading medical journals and bulletins and letters from government agencies and poring over massive volumes of revised codes; attending meetings of medical organizations, specialty groups, hospital departments, continuing medical education programs, seminars and refresher courses; conferring with lawyers about professional liability matters and with accountants about new tax codes and billing procedures; and instructing the office staff about the new forms — and looking for a place to store them.

If you doubt the impact of invisible time on the cost of medical care, consider this: If a new regulation were passed which required that a new prescription for digoxin be written every month, and 100,000 physicians spent only 30 seconds per month complying with the new regulation as it pertained to a single patient, and the physician charged only \$30 an hour for his time (automobile mechanics charge a bit more), the resulting total effect on the annual cost of medical care would be an increase of \$300,000. If all factors resulting from the new regulation were considered — real costs as well as invisible time costs — the total increase in the annual cost of medical care would be about \$6,000,000!

Such a regulation would require that five licensed physicians spend their total professional lives doing nothing other than writing prescriptions for digoxin. Lives used up by fiat; paid for by patients who gain nothing.

Invisible time is a factor in every enterprise and it is paid for by everyone who patronizes the enterprise. As demands for time increase, costs increase. If the time is invisible, the reason for the increase in costs also is invisible.

See?

— MRJ

In August, 1982 a public opinion survey was commissioned by the American Medical Association and conducted by a private research firm by telephone, using a questionnaire developed by that firm with consultation by representatives of the AMA and OSMA. OSMA joined in the survey, and 403 interviews were conducted with Oklahomans, using the nationwide topics. Portions of the survey results were released to the wire services and published in many state newspapers in November. Unfortunately, the release by the wire services distorted the overall results of the survey, and contained several factual errors. OSMA contacted the wire services and the individual newspapers publishing this story, and did obtain a partial publication of error correction, but without the sensationalism of the original article. The *OSMA Journal* of January, 1983 published a special report on the survey, which is well worth the thoughtful perusal of all our members. Twelve topics were considered in the survey, and all are interesting, informative and provocative as they compare opinions across the nation with those of Oklahomans. Space does not permit comment on all these items, and only a few will be considered here.

The public view of competition in medicine does not conform to the physicians' concept, (most physicians feel that there are too many doctors) since 45% of those surveyed feel that the number of doctors is about right. This figure is stable over the past several years, and indicates that the public continues to perceive a physician shortage in Oklahoma. This series of questions also reveals that one in four people have obtained medical care in a clinic setting (in contrast to the physician's office) during the past year. This usage extends about equally across demographic lines of education and income, and usage of outpatient facilities is increasing. This appears to be a major competitive threat to physicians in the more traditional forms of practice.



The public image of physicians received considerable attention, and a series of twelve questions were asked, which in combination suggest this image to be very good in terms of accessibility, knowledge of medicine, dedication, and humility. The areas of fees and income, physician/patient interaction, and medical care provided the poor and elderly proved to be problem areas. This indicates that the physician does not take time to discuss fees and the reasons underlying them; the physician does not spend enough time explaining illnesses and treatments to the patient; interaction between patient and office personnel other than the physician is another important facet of the physician's image. Approximately 50% of the respondents believe the poor and elderly are unable to obtain needed medical care, although 72% of those over 65 years of age feel that they receive adequate care in the state. This group's attitude regarding physician's fees and income remains negative toward the profession.

Satisfaction with their last physician visit was evident in that 91% were satisfied overall with that visit, although only 83% were content with the amount of time they had to wait in the office, and 87% with the way the doctor explained things to them. In the national study, satisfaction with every aspect of the last physician visit has increased over previous levels. This finding, in combination with deteriorating public views toward physicians in general, suggests that the public image of physicians is not based on personal experience. It is likely that media exposure plays a more central role in shaping general views, while changes in physician practice are more closely tied to these satisfaction levels.

The information in this survey is under continuing study by the staff of OSMA and the Council on Public and Professional Relations, and will be an important element in the formation of continuing informational, educational and legislative programs of your association.

John A. McIntyre, M.D.

Leaders in Medicine — Bruce R. Hinson, MD

Judy Leitner

His eyes give him away. Bruce R. Hinson, MD, Enid surgeon, is one of those individuals who enjoys life to the fullest. Perhaps that's because for more than half a century he has pursued the only type of life he ever dreamed of — the practice of medicine.

"I always wanted to be a physician, a surgeon," he says. "Why, I was always pretending to be a doctor when I was a boy. I played I was making house calls with my toy cars."

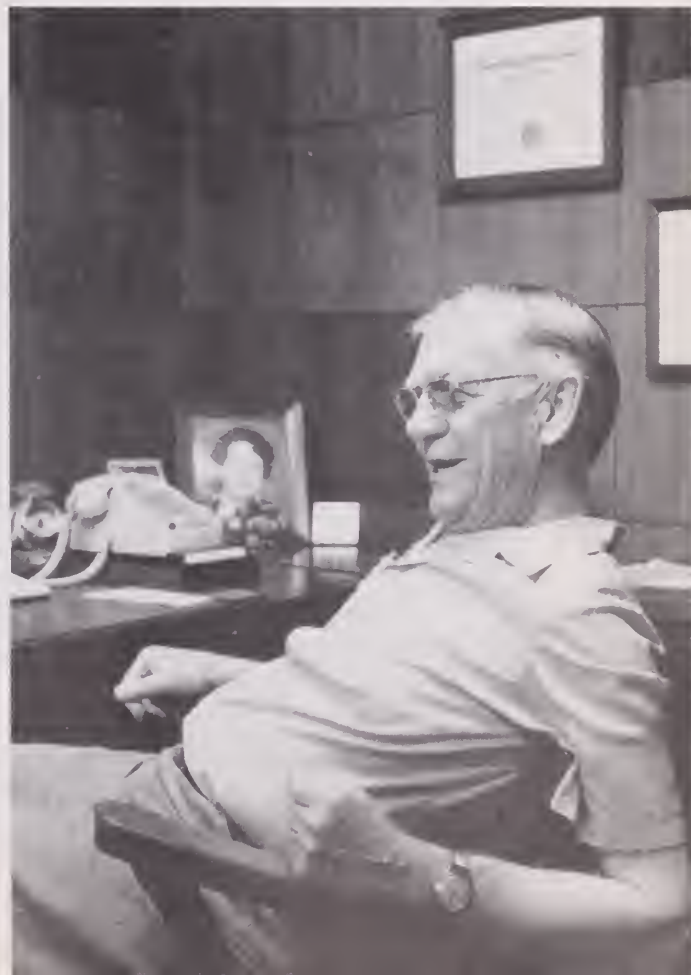
The son of a surgeon, Dr Hinson knew firsthand the type of commitment that is required of a physician. "The only reason a guy should practice medicine is because he doesn't want to do anything else," he says.

"You shouldn't do it to earn a living. It has to be more than that or it's no good," he said. "Any job should be at least 50 percent fun or you shouldn't do it. That's what I tell all my patients."

"I've had more fun practicing medicine than anyone else I know," he said.

Although he voluntarily quit doing surgery at age 72, Dr Hinson has no intention of giving up his practice which includes patients who have been with him 40 years or more.

Dr Hinson pounds his armrest to emphasize a point, laughingly admitting he is rarely "in doubt."



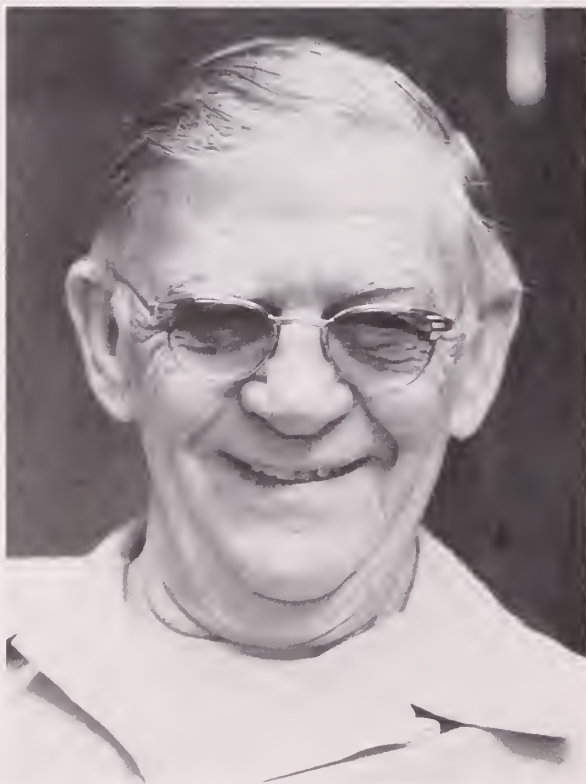
He maintains office hours three and one-half days a week. His office, across the street from Enid's St Mary's Hospital, is built on the site of Hinson's childhood home. His father, Tolbert Hinson, MD, once owned the hospital.

Tolbert Hinson, also a surgeon, moved his family to Enid in 1915 to head up Enid Springs Hospital. Prior to that, he had practiced first in Fletcher and then in Thomas, Oklahoma.

Dr Bruce Hinson was born in Bono, Arkansas, August 4, 1906, and was only a few months old when his family moved to Oklahoma. He has lived most of his life in Enid and attended Phillips University and the University of Oklahoma.

He received his medical degree from Northwestern University, Chicago, in 1932, served a one-year internship at St Louis City Hospital, then returned to Enid to complete a preceptorship in surgery under his father and Raymond Jacobs, MD.

Dr Hinson's father died at the age of 56, but the two doctors Hinson practiced together until the death of the elder. Dr Bruce Hinson continued to work with Dr Jacobs until Jacobs' death six years ago.



Neither of Dr Bruce Hinson's two sons elected to keep up the family's medical tradition. His elder son, Bruce, is a professor of journalism at OU, and his younger son, Brian, is a funeral director in Enid.

Dr Hinson has been a fellow of the American College of Surgeons since 1940. He served as president of the Oklahoma State Medical Association in 1954-1955. During his term, the

"The only reason a guy should practice medicine is because he doesn't want to do anything else."

association worked with the OU medical school to establish a preceptorship program for medical students.

"We also bought the property where the association is now located. We bought it for practically nothing," he recalls, adding there was quite a controversy over whether to pay it off quickly or to go to long-term financing. Dr Hinson was honored with a life membership in the state medical association in 1981.

Dr Hinson was head of the Garfield County Medical Society in 1952 during the national polio epidemic. During his tenure, the county association participated in a county-wide immunization program.

"St Mary's hospital was the first state general hospital to take care of polio patients," Dr Hinson says with pride.

Dr Hinson's military service during World War II made an impression that he carries with him to this day. He entered the US Army Medical Corps in July 1942 with the rank of captain. Before he was discharged in November 1945, he had risen to the rank of lieutenant colonel and had spent months near the front in Europe as chief of a mobile surgical

Dr Hinson boasts he has had
"more fun practicing than anyone I
know."



Helen York, left, his office manager, and Audrey Stratton, LPN center, assist Dr Hinson in his practice which he has cut back to three and one-half days a week.

One of his attributes, Hinson says, is his ability to listen to his patients.

team consisting of a nurse, anesthesiologist and two technicians.

He was part of a force that arrived at Buchenwald, a Nazi death camp for Jewish prisoners, one day after it had been liberated.

"When we arrived, some of the bodies were still bleeding and the ovens were still going," he said. "The bodies were in stacks twice as big as this room," he added, referring to his office which was at least nine feet wide and 12 feet long.

In writing of the camp to his wife, Elizabeth, Dr Hinson reported that 50,000 people were in a space which he said was smaller than "our airfield at home."

"We saw buildings that you could hardly put 100 men in, and they housed 700. Other rooms about 80 by 80 feet were used by 1,000 men," he wrote.

"The people were fed very little and looked

as pictures you have seen of starving people, except they were moving around."

Dr Hinson was assigned to a base in England for two months before the invasion of Europe by Allied Forces at Omaha Beach. His group arrived on Omaha Beach ten days after D-Day.

Dr Hinson was assigned to the Fourth Auxiliary Surgery Group attached to the Third Army.

He was assigned to a field hospital in Sudan, France, at the time of the Battle of the Bulge. "After Patton and the Battle of the Bulge, it took some of the wounded as long as seven days to make it to our facilities."

He said that during a ten-month period while close to the European front, he performed more than 1,500 operations. Although he remembers well the 36-hour shifts, it is the youth of his surgical patients and the mandatory amputations that still haunt Dr Hinson.

"Most of them were just kids in their early twenties," he relates, with the memories of 40 years ago bringing a slight mist to his eyes. Then, obviously searching to find something light to say about the experience, his usual look of good humor returns, and he says jokingly, "Well, at least, at the time we arrived at Omaha Beach we didn't have to dig our own foxholes."

His sense of fun is a trademark. He shared a recent experience with a longtime patient that illustrates that sense.

Judy Leitner received her Bachelor of Arts degree in Journalism from the University of Oklahoma in 1969 where she was listed on the Dean's Honor Roll. She has been a writer and reporter for various publications in Oklahoma and Washington, DC and the recipient of many honors and awards.

"One morning, not too long ago, I got a call at 2 AM from a woman who has been my patient for many years," he said. "She said she had a problem. Everytime she turned on the faucet in the kitchen, she got a shock. She wanted to know what to do about it.

"I asked if the same thing happened in the bathroom. She said she didn't know so I told her to go give it a try. When she reported that she received no shock when she turned on the bathroom faucet, I told her what she needed was an electrician or a plumber. I asked why she was calling me.

"She said she knew she didn't need a doctor but she didn't know who else to call at that time of the morning," he laughed.

In 1949, the Enid Eagle carried a story that reflects the doctor's sense of humor and his ability to cope. As the story goes, Dr Hinson, an avid bird hunter, had been having his sleep routinely interrupted by his new bird dog pup.

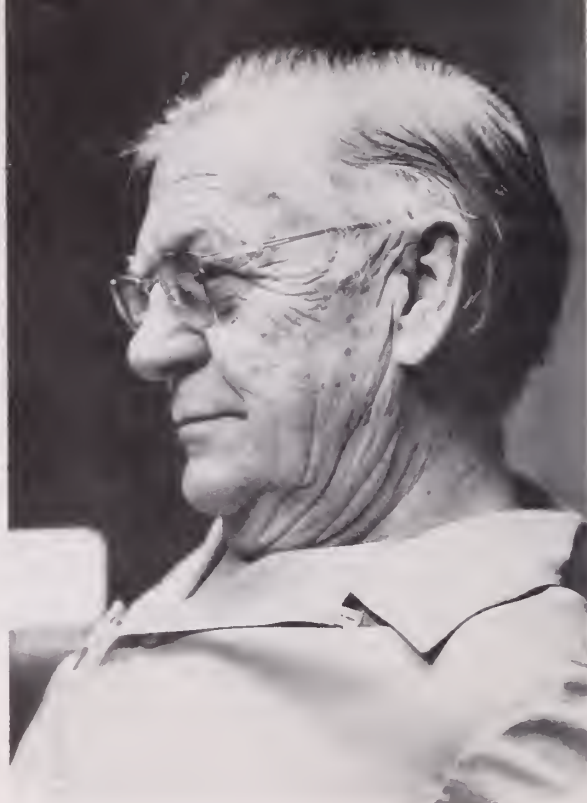
After several nights of getting up in the middle of the night to quiet the barking canine, a very light sleeper and disturbed by the slightest noise in the neighborhood, Dr Hinson had had enough. Thanks to a little ingenuity and an intercom system similar to that used in his office, he was able to solve the problem. He installed an intercom at his bedside and one in the doghouse. Everytime the dog, whose name

" 'When we arrived, some of the bodies were still bleeding and the ovens were still going,' he said. 'The bodies were in stacks twice as big as this room.' "

was Speck, began to raise a ruckus, he would flip the switch and tell him to quiet down.

One afternoon, Dr Hinson spotted his neighbor, Julian Feild, MD, out in an area of the Feild backyard near Speck's house. Dr Hinson still laughs gleefully as he relates how he ran upstairs and switched on the intercom to greet Dr Feild, speaking as if it were Speck.

"After I said, 'Hello Dr Feild, my name is Speck,' he began looking around and hollering, 'Bruce, where are you?' until I broke up laughing," he said.



Hinson still remembers the horror of the Nazi death camps at the close of the war.

Times have certainly changed during the more than 50 years of his medical career, Dr Hinson says. "When I was in medical school, the only vitamins we knew much about were C and D." He predicts the medical profession will be forced to change even more in the future. He said that during his father's day, all doctors made housecalls. His own father started his practice making calls by horse and buggy, and later in a 1913 Buick which Dr Hinson recalls fondly, even though it didn't have a heater. As the competition among doctors for patients escalates, patients will be better served, he believes, and housecalls may be a thing of the future as well as the past, Hinson said.

For 15 years, from 1952 until 1967, Dr Hinson was a member of the Blue Shield Advisory Board. "I fought the government the whole time, too, and what we feared then (socialized medicine) is going to come about," he said.

"We're digging our own graves because prices just keep going up and up," he said of the costs of medical care. One way doctors can help reduce costs is to take time to listen to their patients. "Eighty-five percent of patients can be seen and treated generally," he said, emphasizing his contention that much of the medical specialization prevalent today is not really necessary.

"Of course, there are some specialties that are really necessary — such as neurosurgery.

"Medical education has become so cockeyed expensive that only those who have money can afford it," he said, adding that it is a situation he thinks will ultimately be harmful.

"There is so much to learn, it's frightening. It's just impossible to keep up with all that's known now," he sighed.

As he paused to sip his coffee, a smile spread across his face. "One of my friends says of me, 'Bruce may not always be right, but at least he's never in doubt,'" he laughed. "That's true, too."

Illustrating his point about listening to his patients, Dr Hinson says he once correctly diagnosed a ruptured appendix just by talking to his patient by telephone. Although he believes diagnostic tests are important, they are often expensive and cannot supplant adequate doctor-patient communication.

Dr Hinson's office is full of mementoes of his medical achievements and of pictures of his seven grandchildren. He is also a great grandfather. Gifts from patients are scattered about the office and reflect his longtime interest in bird hunting.

Among his office appointments is a pheasant done in copper relief by son Bruce when he was about seven years of age. The pheasant was the bird Dr Hinson most liked to hunt.

There is also a painting of a pheasant done by a patient who was 89 years old at the time she did it. She had had cataracts for a number of years and Dr Hinson finally convinced her to have surgery. She was so grateful following the successful surgery, that she painted the pheasant picture for him.

Dr Hinson met the girl who would become his wife, Elizabeth, when they were in the eighth grade. They have been married 48 years. "I practiced just long enough to get a practice going before I asked her when she was going to marry me," he says.

Mrs Hinson is a graduate of Kansas University, where she received a bachelor's degree, and of Columbia University, where she earned

"As the competition among doctors for patients escalates, . . . housecalls may be a thing of the future as well as the past."

a master's in English. She was teaching at Stephens College in Missouri prior to their marriage.

One of the finest forms of recreation for Dr Hinson has been listening to his wife read aloud. "During our marriage, she must have read ten million words to me. She used to read whenever we were in the car. She has read until she almost ruined her voice."

The couple is particularly fond of detective stories, historical novels and the Bible. "She can just read for hours and I love to listen," he said. "Reading is one of the most important things there is."

Although his very active practice kept him extremely busy and away from home a good deal of the time, Mrs Hinson made sure the family ate the evening meal together whenever possible.

Hinson checks over longtime patient Dwight Davis, the pharmacist in the building where Hinson practices.



"She would have the kids wait until I got home to eat — it would be anywhere between 7:30 to 9 PM," he recalled. "They would be upset when the phone would ring during dinner."

Old habits are hard to break for Dr Hinson. Although he plans to keep working until he is no longer able to do so, and he has slowed down, he still wakes up most mornings by 5:30 AM. "I got up at that time forever, but now, I stay in bed until 6:30 AM."

He still sees between 20 and 40 patients per workday. He does primary health care and refers many patients to other physicians. He will perform very minor surgery in his office and makes emergency room calls. He also makes rounds each day at St Mary's, where so much of his career has been spent.

Dr Hinson himself determined when he should quit doing surgery, his first love in medicine. "I just thought that I shouldn't do it after I turned 72. No one should do it at that age, it's just too hard work," he explained.

He says he can't retire completely for several reasons. "I would go wacky, I'm just too jumpy." Also, he jokes that his wife won't allow it. "Besides, I've seen too many of my friends who retire with nothing to do and soon they get sick, their bowels won't move and they can't get along with their wives."

As with most other dedicated physicians of his era, he had little time for hobbies and interests outside medicine. His one hobby was

" 'We're digging our own graves because prices just keep going up and up,' he said of the costs of medical care."

bird hunting, but he gave it up more than a year ago. "It became work. It was no longer fun, so I quit," he said. "I just gave my dog away. I don't like yard work, fishing, sports or anything like that. I never have," he said. "In fact, when I was a kid, I used to hire a neighbor boy to mow the yard for me. I worked a double shift at the drug store to pay him.

"I think people should work as long as they can unless they have something to replace it with. I don't," he said.

Dr Hinson has managed to hang on to his



Hinson enjoys his coffee while counseling a patient.

office staff for a number of years. In fact, in all his years of practice, he has had only two office managers. The current one, Helen York, has been with him 42 years. She came to work for Hinson when a friend who was working for the doctor moved to California. Their working relationship has lasted so long because, "I do exactly what she tells me to," Hinson claims with a twinkle in his brown eyes.

His nurse, Audrey Stratton, LPN, and Dora Lu Freeman, secretary who works part-time, have been with him seven and seventeen years respectively.

Mrs York says her boss has mellowed greatly in the last 15 years. She says his straightforward manner and honesty have cost him some patients over the years.

"He'll shield his patients whenever he can, but he won't lie to them," she said. Asked what one word she would use in describing Dr Hinson, she thought for a moment and replied, "Honesty." Asked the same question, Mrs Stratton used the term "straightforward."

She added the doctor is never afraid to say he doesn't know if he is unsure of a medical diagnosis. It is evident both women take pride in working with Dr Hinson.

Mrs York said, "He has always worked and, until recently, he wasn't home much. He worked every day of the week, even Saturdays."

As we were closing the interview which Dr Hinson told us at the beginning he wanted to get over with "as soon as possible," he couldn't resist advising this writer to get busy and get on a diet.

"I can't stand obesity," he said emphatically. "It kills more people than any other type of abuse — including alcoholism. And for most people, it is a matter of too high a caloric intake."

He then grinned and joked that his proclivity for saying what he thinks gets him into trouble from time to time. "I don't have any men friends and very few women friends, I guess because I'm always telling them what I think," he laughed.

Never a joiner, Dr Hinson maintains his memberships in the state and county medical associations, the American Medical Associa-

tion and is an emeritus member of the Southern Medical Association. He and his wife are active in the Presbyterian Church and, other than his family and friends, he has few other interests.

He and his wife used to travel, but she became disabled a few years ago and "we haven't been anywhere farther than Oklahoma City since." During their traveling days, they visited every state, India, Australia, New Zealand, Europe and Russia.

He says he was a New York Yankee fan until the baseball strike a couple of seasons ago caused him to lose interest.

One thing he will never lose interest in is fun. His motto is, if it isn't fun, don't do it. Thousands of people in northwest Oklahoma are glad that practicing medicine has been fun for Dr Hinson.

Judy Leitner, 3505 Meadowbrook Drive, Midwest City, OK 73110.

Photographs by Donald Norris.

Shigellosis Complicated By Klebsiella Sepsis

MEL CLARK, MD,
MARK MORAN, MD,
HAROLD G. MUCHMORE, MD

A 96-year-old patient was hospitalized with Shigella sonnei dysentery. Gram-negative shock ensued, and blood cultures yielded Klebsiella pneumoniae. Klebsiella bacteremia complicating shigellosis has been described in children but has not previously been reported in an adult patient.

Bacteremia is a rare complication of shigellosis and is usually due to the shigella species responsible for the dysentery. This shigella bacteremia is usually undetectable clinically and appears to be unrelated to the severity of the disease.^{1, 2} Septicemia due to various enteric organisms is even rarer and has been documented previously only in children,^{3, 4} but in this age group appears to constitute a clinically recognizable syndrome. This report describes an adult patient whose shigellosis was

complicated by Klebsiella bacteremia and ensuing septic shock. His course was strikingly similar to that previously reported in children.

Case Report

A 96-year-old American Indian male presented to the VA Medical Center, Oklahoma City, Oklahoma, with a two-day history of fever and bloody diarrhea. A 9-year-old great granddaughter in the household was ill with fever but no diarrhea. There was no other history of exposure to infection. The patient was alert. His temperature was 103° F and the blood pressure on admission was 130/70. There was no skin rash or adenopathy. The abdomen was soft and non-tender with normal bowel sounds. There were no other pertinent positive physical findings. The white blood cell count was 24,000/mm³ with 61% mature neutrophils and 21% band forms. Stool examination revealed mucus, red cells and numerous leukocytes with neutrophils predominating. An unprepared proctoscopic examination to 20 centimeters revealed petechial hemorrhages and a small amount of mucopurulent material. Abdominal films revealed no abnormalities; the chest x-ray showed a small amount of basilar fibrosis. A presumptive diagnosis of shigellosis was made, and intravenous fluids and ampicillin (2g intravenously per 24 hours) were given. Two blood cultures drawn at the

From the Department of Internal Medicine, College of Medicine, University of Oklahoma Health Sciences Center and Veterans Administration Medical Center, Oklahoma City.

time of admission yielded no pathogens. Stool cultures were obtained.

The patient improved during the third and fourth days of his illness (first and second hospital days). His temperature returned to normal and the diarrhea subsided. Late in the fourth day of his illness he suffered a shaking chill and spiked a temperature. To 102° F. The white blood cell count increased to

"Shigellosis continues to be a common disease in the United States despite high hygienic standards."

32,000/mm.³ He complained of upper abdominal pain. Blood pressure dropped to 70/40 and urine output fell. A diagnosis of septic shock was made. After obtaining two separate blood cultures, 2g of methylprednisolone were given intravenously. The results of stool cultures taken at admission became available at this time and revealed *Shigella sonnei* resistant to ampicillin. Antibiotic therapy was changed to cephalothin and tobramycin. Both blood cultures drawn at the onset of septic shock grew

Mel Clark, MD, was graduated from the University of Oklahoma College of Medicine in 1978 where he is currently serving a Fellowship in Cardiology. Certified by the American Board of Internal Medicine, Dr Clark is a member of the American College of Cardiology, American Heart Association, and American College of Physicians.

Mark Moran, MD, is presently a Fellow in Nephrology at the University of California in Los Angeles. Dr Moran is certified by the American Board of Internal Medicine.

Harold Muchmore, MD, was graduated from the University of Oklahoma College of Medicine where he is now professor of medicine in the Department of Medicine, Infectious Disease Section. He is certified by the American Board of Internal Medicine/Infectious Disease.

Klebsiella pneumonia. Stool cultures from hospital days three and four revealed no pathogens. After 24 hours of antibiotic therapy there was no clinical evidence of shock and the patient recovered uneventfully. Antibiotics were discontinued on the tenth hospital day, and the patient remained asymptomatic. He was discharged after 14 days of hospitalization.

Discussion

Shigellosis continues to be a common disease in the United States despite high hygienic standards. The Center for Disease Control recorded 19,511 cases in 1978, and the true incidence is undoubtedly higher. The disease is usually self-limited and without serious complications or sequelae.^{1, 2}

Five cases of Shigellosis complicated by enteric sepsis have been reported in children. Neglia *et al*³ reported two patients with *Shigella sonnei* dysentery who developed secondary *Klebsiella* septicemia. Haltalin and Nelson⁴ have reported three cases of shigellosis with secondary *Aerobacter* sepsis, one of which had concomitant *Escherichia coli* sepsis as well. In addition, Barrett-Connor and Connor¹ reported three cases of pneumococcal bacteremia complicating *Shigella* diarrhea, but two of these patients had associated pneumonitis.

The clinical course exhibited by the patients was remarkably similar and appears to represent a clinically recognizable syndrome. Comparing our adult patient's course with that of

"One hypothesis is that the characteristic mucosal ulcerations seen in shigella dysentery permit the organisms to gain access to the bloodstream."

the younger patients reveals striking similarities. All patients presented with fever and diarrhea, and the diagnosis of shigellosis was made by stool culture. Admission blood cultures were invariably negative. Fluid replacement and antibiotics were begun, and the initial course was one of steady improvement, with decrease in diarrhea and abdominal pain, and defervescence. On the third to sixth day of the illness septicemia appeared abruptly, with

spiking fever, leukocytosis and occasionally abdominal pain, prompting the second set of blood cultures which produced the responsible organism.

The pathogenesis of this complication is unknown. One hypothesis is that the characteristic mucosal ulcerations seen in *Shigella* dysen-

"The clinical course exhibited by the patients was remarkably similar and appears to represent a clinically recognizable syndrome."

tery permit the organisms to gain access to the bloodstream. The fact that all reported cases of non-*Shigella* sepsis complicating shigellosis (excluding the cases of pneumococcal sepsis associated with pneumonitis) are due to enteric organisms supports this hypothesis. Although

the possibility of decreased host resistance was not evaluated in our patient, this seems unlikely in view of his previous excellent health.

We have found no previous reports of this complication of shigellosis in adult patients. Awareness and early recognition of this clinical syndrome, which most often begins with a "secondary" temperature elevation after three to six days of clinical improvement, are of obvious importance. Such a course is unusual in other types of diarrheal processes. When confronted with such a presentation, the physician should obtain blood cultures and begin therapy for gram negative sepsis. The early institution of such therapy may be life-saving, particularly in the elderly patient.

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Postmortems and the Growth of Modern Medical Knowledge in 19th Century Europe

VINCENT J. KNAPP, PhD

Postmortems were much more critical to the advance of scientific medicine in 19th century Europe than has previously been emphasized.

This was true of tuberculosis and other diseases.

Modern medical science was born during the 19th century. During the early part of the 1800s in Europe, medical researchers, inspired by major discoveries being made by French physicians, not only pioneered the development of modern physiology but also went on to analyze the pathological course of many diseases within the body.¹ Most of these new discoveries would have been held up for decades had it not been for the growing practice of exploratory postmortems. In the more secularized atmosphere of the early 1800s, the former religious prohibitions against autopsies were finally beginning to fall away. And once

they did, modern medical science had its first real opportunity to explore the organic and neurological consequences of disease.

So many gigantic breakthroughs occurred in the 19th century, ranging from Jenner's discovery of vaccination to Koch's unparalleled efforts in the area of bacteriology, that the significance of the growth of postmortems could easily be overlooked. Yet, monumental gains were forthcoming in this new and obviously vital area of medicine. It is true that most of the new knowledge that was being developed from autopsies involved tuberculosis, increasingly the number one killer of the age. But even beyond this, autopsies would, for the first time in European history, point to the deep-seated consequences of syphilis. They also pinpointed the impact that cholera could have upon the intestines. And without the widespread use of postmortems, the medical profession never would have understood just how prevalent typhus actually was in the cities.

Precursors

There were, of course, numerous physicians who in the past had defied conventions and had gone ahead and performed postmortems. Among them was the famous Dutch physician

Research for this article was done at The World Health organization (Geneva) and The Royal Society of Medicine (London).

Sylvius de le Boë. In the 1670s, Sylvius took note of the growing incidences of tuberculosis within the general population and consciously turned to autopsies in an attempt to find out more about this growing threat. As a result of his studies, Sylvius was among the first to inform Europeans that tuberculosis, or phthisis as it was then called, was primarily a disease of the lungs. Commenting about the tuberculosis

"Without the widespread use of postmortems, the medical profession never would have understood just how prevalent typhus actually was in the cities."

that he had discovered in numerous victims, he declared: "I found more than once larger and smaller tubercles in the lungs, which on section were found to contain pus. From these tubercles I hold that not infrequently phthisis has its origin."²

A few decades after this, the well-known English physician Robert Morton was able to prove, after conducting his own autopsies, that in cases of pulmonary tuberculosis the pleura were nearly always inflamed.³ Meanwhile, in Italy, yet another important breakthrough was made when Georgio Morgagni discovered, after working on cadavers, that syphilis was indeed a generalized and not a localized disorder.⁴

The French School

For nearly a century after this, the value of postmortems was deemphasized, only to be revived by the French school of medicine in the early part of the 19th century. Among those whose names stand out and who made unprecedented contributions to the revolution in medical knowledge that was then taking place were two Frenchmen, Gaspard-Laurent Bayle and René Laennec. Between them, these two medical researchers conducted hundreds of autopsies, all a part of their effort to find out more about tuberculosis.

As a result of Bayle's investigations this noted French physician was able to discover that pulmonary tuberculosis had three discern-

ible stages, the latter stages of which were, he thought, both irreversible and terminal.⁵ Laennec's research produced even more astonishing results. For prior to this time, it had been almost universally assumed that tuberculosis was an incurable disease, a proposition that even the great Bayle agreed with. But Laennec remained unconvinced by this theory. In fact, after examining the scar tissue on the lungs of a large number of people, he became convinced of just the opposite. Describing in the 1810s what were surely very unorthodox views, Laennec commented:

After I was convinced of the possibility of cure in the case of ulcerations of the lungs, I began to fancy that nature might have more ways than one of accomplishing this end, and that in certain cases the excavations might cicatrize [heal] in the same manner as . . . in other organs.⁶

Laennec had demonstrated very early on what others had not even suspected, that tuberculosis was a curable disease.

The Study of Tuberculosis

The work that was being done by Bayle and Laennec soon had its repercussions on the other side of the Channel in England. Here, Dr Henry Southey, along with others, knew that they could identify pulmonary tuberculosis as the cause of death by certain telltale signs on the lungs. Stating the obvious, Southey pointed out that "on examination the lungs of those who have died of strumous phthisis, a number of vomicae are . . . found of different sizes; a whole lobe and sometimes the entire lung on one side will be found filled with them, small portions of lung in a sound state intervening."⁷

For a number of decades after this, it was thought that these vomicae or lesions had to be large in size, but in 1843 the research of another English physician, William Addison, disproved this assumption. Functioning as a

Vincent J. Knapp, PhD, received his doctorate degree from the University of Rochester in 1964. He has specialized in the social history of Europe. He is a member of the American Historical Association and at this time is professor of history at State University of New York, Potsdam, New York.

coroner, Addison began to examine the lung tissue of those who were suspected of having died of tuberculosis. Speaking of his experience in this area, he commented:

On examining the lungs they appeared to be quite healthy, . . . of the normal light pink hue; no tubercles could be detected by the touch, and all of the sections that were made swam in water. After two days' soaking, the sections were slightly extended, and examined by lens when a great many tubercles were discovered.⁸

What these postmortems being done by Addison and others were proving, of course, was that pulmonary tuberculosis was much more extensive in European society than the medical profession and government authorities had imagined.

Indeed, the growing practice of postmortems was not only revealing, if somewhat slowly, more and more about the pathological course of tuberculosis in the respiratory system but also was repeatedly demonstrating the actual frequency of the disease.

A striking example of this last consideration took place at the Royal Naval Hospital at Malta. Very early on, physicians at this hospital got into the habit of performing autopsies on every seaman who died at the base hospital. To the horror of the staff and naval commanders as well, it was revealed that between 1829 and 1838 an astonishing 40% of all deaths were directly traceable to pulmonary tuberculosis.⁹

While autopsies were beginning to make plain the extent of pulmonary tuberculosis, the

were proving that in major cities such as Paris some 33% of the population were dying from one or another form of tuberculosis.¹¹ This kind of information was now readily available because, by then, Parisian hospitals were regularly conducting postmortems, an operation which a hundred years earlier had been done only on occasion.

Other Diseases

By the middle decades of the 19th century, the unparalleled use of postmortems was not only revealing the true pathological course of tuberculosis, but also was casting light on the nature of other illnesses. A prime example here was cholera. Cholera had first struck Europe in the early 1830s, taking millions of lives. While its symptoms were all too apparent, the medical profession was baffled by its organic consequences. That particular mystery was cleared up in the middle of the 1850s. It was in 1854 that the Royal College of Physicians in London, itself strongly convinced by the discoveries of certain French and German pathologists, announced that in the case of cholera "the mucous membrane of the small intestine was constantly a rose tint . . . we almost always found intense capillary hyperaemia."¹²

Once it was realized that cholera was essentially a disease of the intestines, more imaginative men like the Italian Filippo Pacini and the German Robert Koch went on from there to look for the agent that they believed was responsible for the disease.¹³ What they discovered, of course, were tiny microscopic organisms and the beginning of the science of bacteriology. As was often the case in the history of 19th century medicine, one new bit of scientific knowledge often paved the way for new and even more monumental truths. And through it all, postmortems were playing a more critical role.

This fact became even more apparent in the 1860s, when autopsies finally began to expose the actual extent of the impact of syphilis on the body. Ever since the 1490s, when malignant syphilis had first settled in Europe, the medical profession had falsely conceived of syphilis as a curable disease once its initial symptoms faded. It had come to believe this because syphilis, like so many other diseases prior to the 19th century, had been viewed purely as a symptomatic disorder. Once the external signs of syphilis disappeared, very often

"Laennec had demonstrated very early on what others had not even suspected, that tuberculosis was in actuality a curable disease."

fact that this disease could infect other parts of the body remained a mystery up to 1868. In that year, the great French pathologist J. A. Villemin, working with rabbits and not cadavers, was able to prove that tuberculosis did indeed have a "general effect . . . on a whole series of organs."¹⁰ Now that physicians knew where to look for the disease, the ultimate result here was a whole series of new statistical studies on tuberculosis.

By the turn of the century, those statistics

after treatment with mercury, the disease was thought to be gone forever.¹⁴

It was during the decade of the 1860s that the practice of conducting postmortems on the victims of other diseases started to spread to those who died of syphilis. It was only then that autopsies routinely performed by hospitals like St George's in London began to reveal just how insidious a disease syphilis actually

"The sciences of physiology and pathology have advanced so far over the past 150 years that autopsies now have a highly specialized character."

was. As a result of these studies, it was becoming clear to more and more pathologists that syphilis was indeed capable of irritating and inflaming certain body organs along with the body's arterial and neurological systems.¹⁵

Besides playing a key role in advancing medical science and its knowledge of pathology, postmortems became increasingly critical in detecting the presence or absence of certain diseases. Up to the second half of the 19th century, for instance, the medical profession was aware that typhus was a common enough disorder, but the true extent of the disease proved almost impossible to verify. Once again autopsies, routinely done this time in hospitals in Berlin and Munich, brought forth truly startling revelations. The first real evidence that typhus was rapidly making its way through the German population came from studies that were done at the Munich General Hospital between 1865 and 1875. These reports demonstrated rather conclusively that, after tuberculosis, typhus was the second most prominent disease among all levels of Munich society.¹⁶ These findings were confirmed by pathological studies done at the Berlin Charity Hospital in 1875, which proved that typhus was the second leading cause of death among patients in the wards of this hospital.¹⁷

Autopsies in the 20th century have become a very specific medical tool. The sciences of physiology and pathology have advanced so far over the past 150 years that autopsies now have a highly specialized character. Physicians today are supremely aware of the organic, neurological and vascular consequences of most infectious and noninfectious diseases. The same was not true during most of the 19th century. For the majority of physicians during the century, postmortems were a learning device. Doctors conducted autopsies not to confirm what they already knew, but rather to gather new information. As a result, postmortems at the time largely had an exploratory character. They added significantly to the profession's growing fund of medical knowledge. Without the fantastic insights that postmortems gave into such diseases as tuberculosis, cholera, syphilis and typhus, the West's eventual conquest of most infectious diseases probably would have been a much slower and a much more discouraging process.

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News From The Oklahoma State Department of Health

Trihalomethane Studies

Several Oklahoma communities are experimenting with alternative disinfectants for their water supplies as a result of recent Federal Safe Drinking Water Act regulations limiting the concentrations of trihalomethanes (THMs). These compounds are formed during conventional chlorination of surface water containing naturally occurring humic materials. The Environmental Protection Agency (EPA) has sought to limit the combined concentrations of THMs to 100 micrograms/liter.

EPA and state regulation of these compounds is phased to begin immediately for communities of less than 75,000 and one year later for larger communities. These smaller

communities will be testing techniques for compliance over the next year.

Abnormally high chlorine residuals may be present periodically, resulting from a combination of the tests and the normal maintenance of the bacteriological integrity of distribution systems, during this time.

Dialysis center clients and some hospital patients are specially sensitive to higher chlorine residuals, but these facilities typically have additional in-line treatment systems utilizing carbon filters, so problems are unlikely. However, the life of these filters is determined partially by the residual chlorine level at their input, so while these communities strive to upgrade their water supplies, there is a greater need for scrutinizing the performance of these filter units. □

COMMUNICABLE DISEASES IN OKLAHOMA FOR DECEMBER, 1982

DISEASE	December	December	November	TOTAL TO DATE	
	1982	1981	1982	1982	1981
Amebiasis	1	1	—	12	25
Aseptic Meningitis	13	6	24	211	107
Brucellosis	—	—	1	8	7
Encephalitis, Infectious	5	1	2	43	26
Gonorrhea (Use Form ODH-228)	1581	1255	1096	16021	15909
Hepatitis A	85	12	50	764	293
Hepatitis B	35	31	23	351	242
Hepatitis Unspecified	41	9	46	317	156
Malaria	—	—	—	8	8
Measles (Rubeola)	—	—	—	30	6
Meningococcal Infections	4	3	3	34	49
Pertussis	2	—	1	8	2
Rabies (Animal)	6	11	13	191	218
Rocky Mountain Spotted Fever	—	—	—	76	99
Rubella	—	1	—	3	3
Salmonellosis	42	21	31	479	413
Shigellosis	40	31	26	416	455
Syphilis (Use Form ODH-228)	19	18	20	209	185
Tetanus	—	—	—	1	2
Tuberculosis	36	34	22	337	336
Tularemia	3	9	—	35	41
Typhoid Fever	—	—	—	3	5

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OSMA Sends Annual Meeting Program and Hotel Information

All OSMA members should have received the tentative program and hotel reservation card for the OSMA 1983 Annual Meeting in Tulsa on May 4-7, 1983. Any members who have not received these materials or who would like additional information about the meeting should contact Anita Delaporte at OSMA headquarters, (405) 843-9571. An official program with registration and ticket order forms will be sent to members later this month.

Contest rules and entry forms for the OSMA photography contest to be held during the annual meeting were mailed to association members in late February. Anyone who would like to enter the contest but did not receive an entry form should contact OSMA headquarters. The contest is open to OSMA members and spouses. □

Sculpture Display and Raffle Set for OSMA Annual Meeting

A superb collection of western bronze sculpture by Oklahoma artist Jack Riley will be on display Friday, May 6, at the OSMA 1983 Annual Meeting. The OSMA Auxiliary is sponsoring the display and will raffle off one of the pieces at the Presidential Inaugural Banquet and Ball. All of the bronzes will be available for sale.

Raffle tickets for the "Buffalo Dreamer" bronze are \$1.00 apiece or \$5.00 for a book of five and may be purchased from auxiliary members. Proceeds from the raffle and a portion of proceeds from the sale will go to the auxiliary's Nurses Loan Fund.

Riley, who will be present at the display, has won many awards for his sculpture, including the 1977 Gold Medal at the Western Trails Art Show in Littleton, Colorado; the Silver Medal at the 1979 George Phippin Memorial Art Show in Prescott, Arizona; and the first place award at the 16th Annual Oklahoman Artist Salon, Oklahoma Museum of Art in Oklahoma City.

His works range in size from seven inches to 30 inches high. Each has been researched for authenticity and is rich in detail and skilled workmanship. □

PLICO Health Enrollment Up, Wellness Bonuses on the Way

PLICO Health, the comprehensive major medical and hospital insurance program for OSMA members, their families, and their employees, now has nearly 14,000 individuals enrolled.

Enrollees are advised that they will start receiving their "stay-well" bonuses on their anniversary dates (date of enrollment). They also are advised that there will be a 12% increase in PLICO Health's premiums across the board, effective on their anniversary dates. Despite this premium rise, PLICO Health premiums remain well below those charged by other carriers.

Applications for enrollment in PLICO Health are available upon request from C. L. Frates and Company, (405) 843-0215. □

AMA Conference to Examine Prevention of Disabilities

The American Medical Association (AMA) will host a national conference on the prevention of disabling injuries, May 20-21, 1983, at the Omni International Hotel, Miami, Florida.

The conference will bring together experts in highway safety, alcoholism, traumatic and disabling injuries, and occupational and sports-related injuries.

The two-day meeting will feature papers on:

- injuries and the nation's health
- prevention of serious disability
- why traumatic, disabling injuries occur
- alcohol and stress
- prevention of injuries on the highway, at home, and during recreation
- injuries related to agriculture and industry.

The meeting also will feature a panel discussion on the physician's role in preventing alcohol-related disabilities. □

OFFICIAL CALL —

The House of Delegates of the

**OKLAHOMA STATE
MEDICAL ASSOCIATION**

**Will Convene
Its**

77th ANNUAL MEETING

At The

EXCELSIOR HOTEL, TULSA, OKLAHOMA

May 4 through May 7

Opening Session: 10:00 AM, Thursday, May 5

Closing Session: 1:00 PM, Saturday, May 7

All members, Delegates, Alternate Delegates and County Society Officials Are Encouraged and Urged to Attend. Business to be Brought Before the House Must Be Submitted by April 4, 1983. All Items of Business Will Be Debated In Open Reference Committee Hearings on May 5th, 1983.

Any Member of the Association May Submit Business For Consideration By the House of Delegates. For Help In Preparing Information For Submission, Please Contact the OSMA Headquarters Office, 601 N.W. Expressway, Oklahoma City, OK 73118 or call (405) 843-9571.

**Larry Long, MD
Speaker of the House**

Plans Announced to Administer New Foreign Grad Exam in 1984

The Educational Commission for Foreign Medical Graduates (ECFMG) and the National Board of Medical Examiners (NBME) have announced that a new examination is being developed to replace both the present ECFMG medicine examination and the Visa Qualifying Examination (VQE).

The new two-day Foreign Medical Graduate Examination in the Medical Sciences, designed to assess the knowledge of all graduates of foreign medical schools in the basic and clinical sciences, will be administered for the first time in July 1984.

Passing the new examination will enable all graduates of foreign medical schools to meet

the medical science examination requirement for ECFMG certification. Such certification is required of both alien and US citizen graduates of foreign medical schools to enter into residency or fellowship programs accredited by the Accreditation Council for Graduate Medical Education (ACGME).

Successful completion of the exam also will enable alien graduates of foreign medical schools to meet the medical science examination requirement to obtain a visa under the provisions of Public Law 94-484.

Beginning in July 1984, the new examination will be given worldwide twice each year in most centers where the ECFMG examination is administered. Information on registration policies and procedures for the new examination will be published by ECFMG later this year. □

Deaths

C. D. CUNNINGHAM, MD 1914 - 1983

C. D. Cunningham, MD, a long-time Ardmore general practitioner, died January 26, 1983. A native of Konawa, OK, Dr Cunningham was graduated from the University of Oklahoma College of Medicine in 1938. Following his service with the US Medical Corps he established his practice in Ardmore in 1946. Dr Cunningham was a member of the Southwest Surgical Congress, the American Academy of Abdominal Surgeons and a Life Member of the OSMA. □

In Memoriam 1982

<i>James Russell Kreger, MD</i>	<i>April 3</i>
<i>Boyd Vance Lucas, MD</i>	<i>April 9</i>
<i>Carlton E. Smith, MD</i>	<i>April 23</i>
<i>Ella H. Murray, MD</i>	<i>May 3</i>
<i>Loyd G. Williams, MD</i>	<i>May 15</i>
<i>A. A. Walker, MD</i>	<i>July</i>

<i>Wesley Russell Mote, MD</i>	<i>July 24</i>
<i>Thomas H. Fair, MD</i>	<i>August 15</i>
<i>Clyde E. Harris, MD</i>	<i>September 1</i>
<i>Tillman A. Ragan, MD</i>	<i>September 5</i>
<i>Floyd T. Hubbard, MD</i>	<i>September 23</i>
<i>William A. Eastland, MD</i>	<i>October 3</i>
<i>William J. Craig, MD</i>	<i>October 19</i>
<i>William M. Wood, MD</i>	<i>October 30</i>
<i>Hugh C. Graham, Sr., MD</i>	<i>November 11</i>
<i>John David Wilson, MD</i>	<i>November 11</i>
<i>Clinton Gallaher, MD</i>	<i>November 15</i>
<i>Bert F. Keltz, MD</i>	<i>November 30</i>
<i>Berget H. Blocksom, MD</i>	<i>December 26</i>
<i>Harold T. Baugh, MD</i>	<i>December 28</i>

1983

<i>Dewey K. Rhea, MD</i>	<i>January 3</i>
<i>Fred C. Buffington, MD</i>	<i>January 4</i>
<i>C. D. Cunningham, MD</i>	<i>January 26</i>

□

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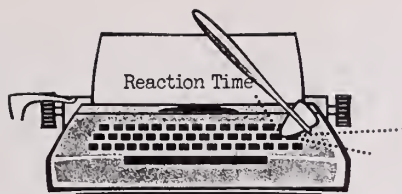
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Dear Dr. Johnson:

This is in response to your article "Rising Costs and Falling Heroes" in the January issue of the *OSMA Journal*, which was interesting.

However, I think I know the reason that physicians' "popularity" has declined so very much. The first and foremost reason is greed on the part of the physician. Patients are much too often kept waiting from one to four hours, they see the doctor for only a few minutes, they are not told (or explained in ordinary words) what their trouble is or are just told they are nervous and are given no medication. The physician seems to forget that if the problem was important enough for the patient to come in, then he or she should be given some form of treatment. Doctors sometimes remind me of the Russian proverb — To a healthy man, everything is healthy.

In addition numerous physicians do not return their patient's telephone calls. And what really irritates me are the egotistic doctors who refuse to list their home telephone numbers in the telephone book. In my experience most listings with an exchange service are almost useless.

So many doctors have such a dictatorial attitude, reveal an utter lack of empathy or warmth or interest, are totally intimidating towards the patient, and many patients feel (and rightly so) that they are being hurried along so that the great doctor can treat the next individual the same way! The previous old fashioned relationship between the doctor and the individual patient is rarely seen anymore. And this again is due to greed — money, money, money! In my opinion the only group whose charges are more ridiculously high than physicians are attorneys — and their charges are criminal!

Most likely, in the very near future, medical charges will be standardized by the government, and you know what — for better or worse — we deserve it!

(You may print this in the *Journal* if you so desire.)

— J. Wildey Morrison, MD

'Informative Seminars Mark National Nutrition Month

March is National Nutrition Month, an appropriate time to begin promoting nutrition education and correcting widespread misconceptions about nutrition.

This is the goal of the newly created Nutrition Committee established jointly by the OSMA Council on Public and Mental Health and the Oklahoma Dietetic Association (ODA).

As a result of the public's current interest in health and fitness, nutrition has become a popular topic. Unfortunately, much of what passes for nutrition information is either unfounded, subject to misinterpretation, or blatantly misleading.

Several programs will be offered by ODA members during March to provide factual nutrition information to physicians and to the public. The programs, dates, and numbers to call for program information are:

- "Combating Myths and Communicating Realities," March 9, State of Oklahoma Teaching Hospitals; contact Oklahoma City District Dietetic Association, (405) 271-2634
- "Nutrition Awareness Seminar," March 19, Oscar Rose Junior College, Midwest City; contact Oklahoma City District Dietetic Association, (405) 271-2634
- "Nutrition Update," March 31, contact Tulsa District Dietetic Association, (918) 747-0325. ☐

CALL FOR RESOLUTIONS

All resolutions to be presented to the Oklahoma State Medical Association House of Delegates annual meeting must be received in the executive office no later than thirty (30) days prior to the meeting. This year's meeting will be held May 4-7, 1983 at the Excelsior Hotel, Tulsa, Oklahoma.

County medical societies or individuals wishing to submit resolutions should mail them to OSMA, 601 NW Expressway, Oklahoma City, OK 73118. Should you need assistance in drafting such resolutions, please contact the executive offices.

SUBMIT YOUR RESOLUTIONS
ON OR BEFORE

April 4, 1983

Book Review

Medicine and Literature. Edited by Enid Rhodes Peschel. Introduction by Edmund D. Pellegrino. New York: Neale Watson Academic Publications, Inc., 1980. Pages 204, \$15.00.

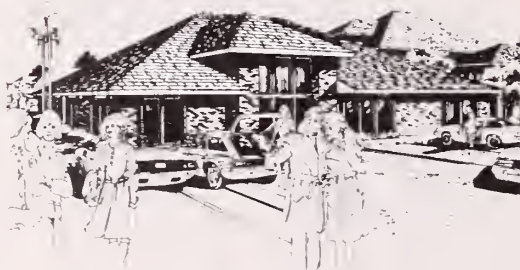
"What does medicine have to offer literature? And what does literature have to offer medicine? New worlds of thought, insight, emotion and experience, as these essays will show. The purpose of this book is to establish a dialogue between these two seemingly disparate disciplines." The editor, the wife of a physician, makes these comments in the Editor's Note. She further states that the collection, which explores the interface between medicine and literature, is intended for both medical and literary readers: physicians, medical students, and nurses; literary scholars, college and graduate students, all people who love

literature. There is an interesting introduction by Dr Edmund D. Pellegrino.

This collection is divided into three parts. Part one deals with physician-writers, part two with physicians pictured in the literature, and part three with disease as an altered state of consciousness. Despite the separation, the book retains a basic unity or theme. Philosophy, history, biography, and medicine blend with varying emphasis in most of the essays. The book has a distinctly European flavor. Twelve of the 24 contributing essayers are professors of French. Relatively little space is devoted to American physician-writers. William Carlos Williams and Richard Selzer are mentioned but other well-known writers from the United States are omitted. Only two physicians are numbered among the essayers, and both of these are psychiatrists.

Although it could certainly be more complete, these essays written on the interface of medicine and literature will prove enjoyable to many, including those individuals who have been or are patients. *Harris D. Riley, Jr., MD* □

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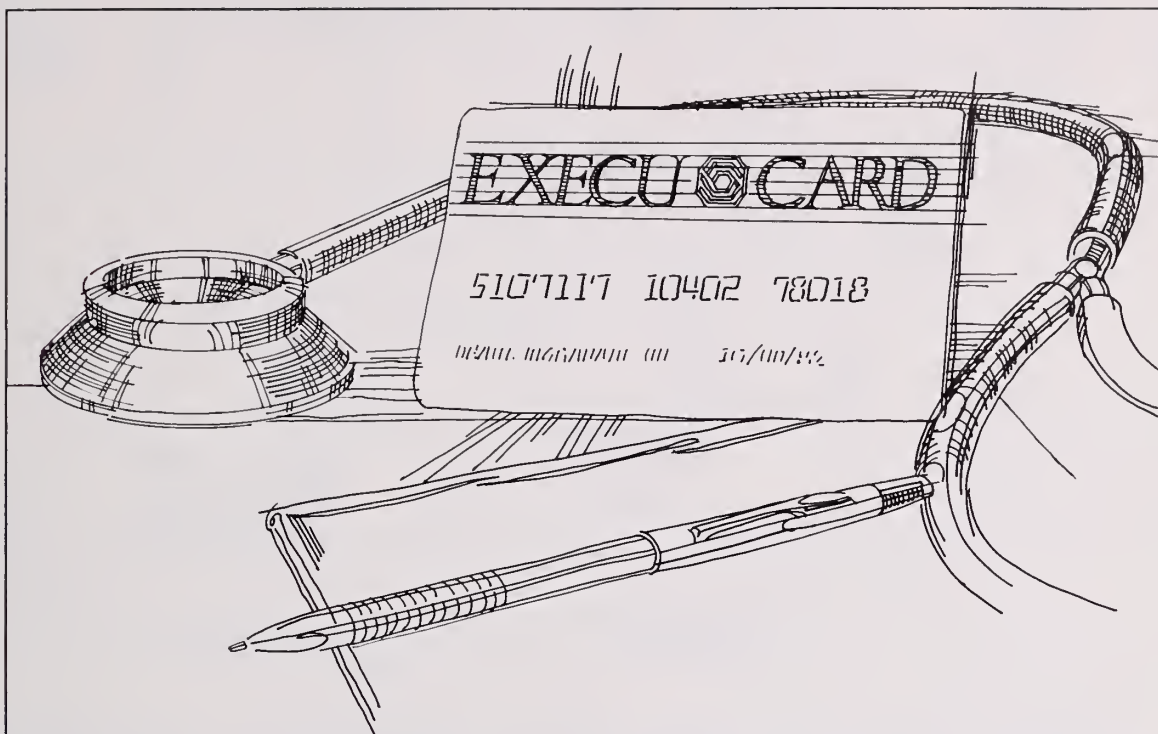
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LARGE MEDICAL CLINIC, fully equipped, available for immediate leasing in Tonkawa, Oklahoma. Tonkawa is a town of approximately four thousand (4,000) population, with only one other full-time practicing physician. There is a large drawing area. Please contact: John Baum, 4308 Classen Boulevard, Oklahoma City, Oklahoma 73118, telephone 525-8662.

FOR SALE: Hamilton examining tables and matching cabinets; one adult, two peds with built-in scales; good condition. Assistant chairs, reception furniture. Nancy Craig, MD, PO Box 18427, Oklahoma City, OK 73154. □



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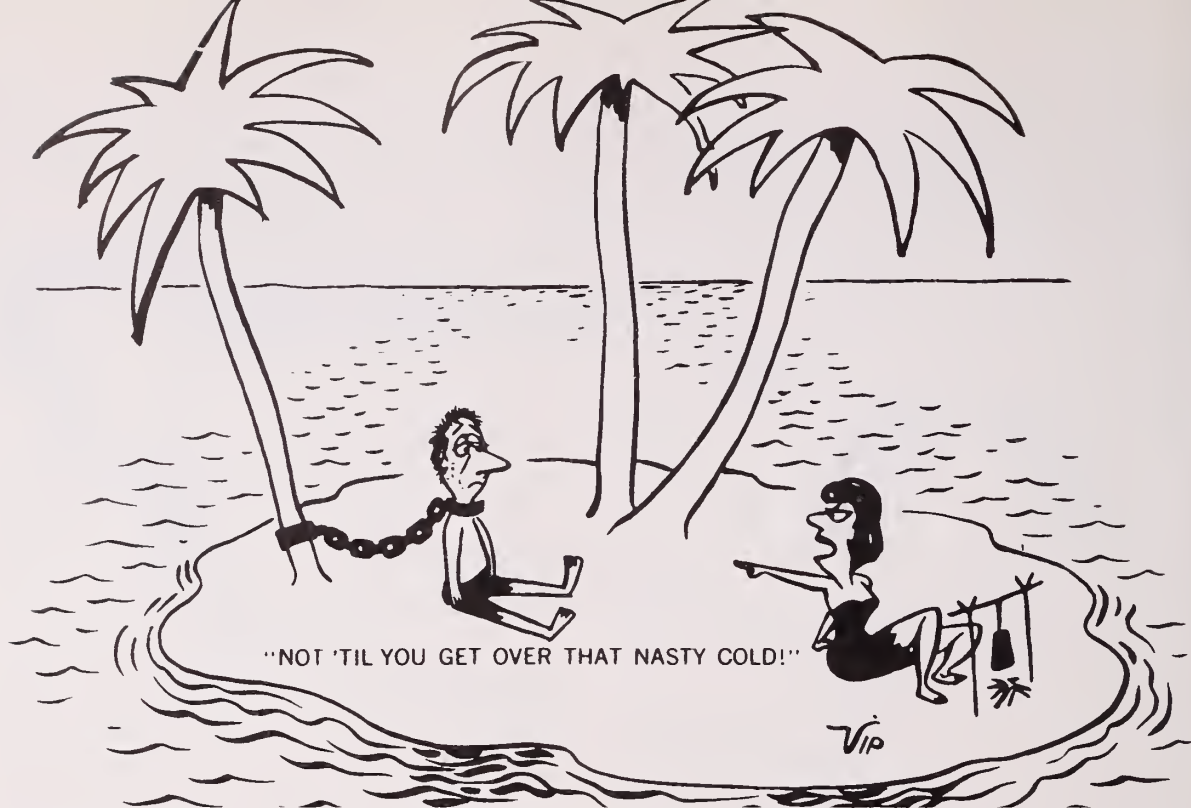
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alcoholics. Ethanol may produce many effects that together bring about nutritional deficiencies, so that alcoholism affects nutrition at many levels.¹

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patients. Nutritional status can be compromised by the trauma of surgery; and some operations interfere with the ingestion, digestion and absorption of food.³



Before prescribing, please consult complete product information, a summary of which follows:

Each Berocca[®] Plus tablet contains 5000 IU vitamin A (as vitamin A acetate), 30 IU vitamin E (as *dl*-alpha tocopheryl acetate), 500 mg vitamin C (ascorbic acid), 20 mg vitamin B₁ (as thiamine mononitrate), 20 mg vitamin B₂ (riboflavin), 100 mg niacin (as niacinamide), 25 mg vitamin B₆ (as pyridoxine HCl), 0.15 mg biotin, 25 mg pantothenic acid (as calcium pantothenate), 0.8 mg folic acid, 50 mcg vitamin B₁₂ (cyanocobalamin), 27 mg iron (as ferrous fumarate), 0.1 mg chromium (as chromium nitrate), 50 mg magnesium (as magnesium oxide), 5 mg manganese (as manganese dioxide), 3 mg copper (as cupric oxide), 22.5 mg zinc (as zinc oxide).

Indications: Prophylactic or therapeutic nutritional supplementation in physiologically stressful conditions, including conditions causing depletion, or reduced absorption or bioavailability of essential vitamins and minerals; certain conditions resulting from severe B-vitamin or ascorbic acid deficiency; or conditions resulting in increased needs for essential vitamins and minerals.

Contraindications: Hypersensitivity to any component.

Warnings: Not for pernicious anemia or other megaloblastic anemias where vitamin B₁₂ is deficient. Neurologic involvement may develop or progress, despite temporary remission of anemia, in patients with vitamin B₁₂ deficiency who receive supplemental folic acid and who are inade-

quately treated with B₁₂.

Precautions: *General:* Certain conditions may require additional nutritional supplementation. During pregnancy, supplementation with vitamin D and calcium may be required. Not intended for treatment of severe specific deficiencies. *Information for the Patient:* Toxic reactions have been reported with injudicious use of certain vitamins and minerals. Urge patients to follow specific dosage instructions. Keep out of reach of children. *Drug and Treatment Interactions:* As little as 5 mg pyridoxine daily can decrease the efficacy of levodopa in the treatment of parkinsonism. Not recommended for patients undergoing such therapy.

Adverse Reactions: Adverse reactions have been reported with specific vitamins and

6,000,000 hospital patients with infections.⁴ Many are anorectic and may have a markedly reduced food intake. Supplements are often provided as a prudent measure because the vitamin status of critically ill patients cannot be readily determined.³

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minerals, but generally at levels substantially higher than those in Berocca Plus. However, allergic and idiosyncratic reactions are possible at lower levels. Iron, even at the usual recommended levels, has been associated with gastrointestinal intolerance in some patients.

Dosage and Administration: Usual adult dosage: one tablet daily. Not recommended for children. Available on prescription only.

How Supplied: Golden yellow, capsule-shaped tablets—bottles of 100.

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highly acceptable to

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References: 1. Shaw S, Lieber CS: Nutrition and alcoholism, chap. 40, in *Modern Nutrition in Health and Disease*, edited by Goodhart RS, Shils ME. Philadelphia, Lea & Febiger, 1980, pp. 1220, 1237. 2. Watkin DM: Nutrition for the aging and the aged, chap. 28, in *Modern Nutrition in Health and Disease*, op. cit., p. 781. 3. Shils ME, Randall HT: Diet and nutrition in the care of the surgical patient, chap. 36, in *Modern Nutrition in Health and Disease*, op. cit., pp. 1084, 1089, 1114. 4. Dixon RE: *Ann Intern Med* 89 (Part 2): 749-753, Nov 1978. 5. Committee on Dietary Allowances, National Research Council: Recommended Dietary Allowances, ed 9. Washington, National Academy of Sciences, 1980, p. 13.

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Prompt, effective treatment with Ru-Tuss® tablets offers welcome relief to winter-cold patients. Ru-Tuss® tablets ease congestion, relieve respiratory-tract itch and the need to sneeze.

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Brief Summary of Prescribing Information (see attached)



Brief Summary of prescribing information

RU-TUSS®

TABLETS

INDICATIONS AND USAGE: Ru-Tuss Tablets provide relief of the symptoms resulting from irritation of sinus, nasal and upper respiratory tract tissues.

CONTRAINDICATIONS: Hypersensitivity to antihistamines or sympathomimetics. Ru-Tuss Tablets are contraindicated in children under 12 years of age and in patients with glaucoma, bronchial asthma and women who are pregnant. Concomitant use of MAO inhibitors is contraindicated.

WARNINGS: Ru-Tuss Tablets may cause drowsiness. Patients should be warned of possible

additive effects caused by taking antihistamines with alcohol, hypnotics, sedatives or tranquilizers.

PRECAUTIONS: Ru-Tuss Tablets contain belladonna alkaloids, and must be administered with care to those patients with urinary bladder neck obstruction. Caution should be exercised when Ru-Tuss Tablets are given to patients with hypertension, cardiac or peripheral vascular disease or hyperthyroidism. Patients should avoid driving a motor vehicle or operating dangerous machinery (See WARNINGS:).

OVERDOSAGE: Since the action of sustained release products may continue for as long as 12 hours, treatment of overdoses directed at reversing the effects of the drug and supporting the patient should be maintained for at least that length of time. Saline cathartics are useful for hastening evacuation of unreleased medication. In children and infants, antihistamine overdosage may produce convulsions and death.

ADVERSE REACTIONS: Hypersensitivity reactions such as rash, urticaria, leukopenia agranulocytosis, and thrombocytopenia may occur. Other adverse reactions to Ru-Tuss Tablets may be drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, dizziness and insomnia. Large overdoses may cause tachypnea, delirium, fever, stupor, coma and respiratory failure.

DOSAGE AND ADMINISTRATION: Adults and children over 12 years of age, one tablet morning and evening. Not recommended for children under 12 years of age. Tablets are to be swallowed whole.

Federal law prohibits dispensing without prescription.



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Staffed by volunteer specialists—an internist, a dermatologist, a gynecologist and a surgeon—and one salaried secretary to handle the record-keeping, the recycled vehicle left Oklahoma City and headed north. Its first stop was Tonkawa,^{1,2} where advance publicity had drawn women from nearby towns, farms and reservations, all seeking the proffered examinations.

Cooperative effort

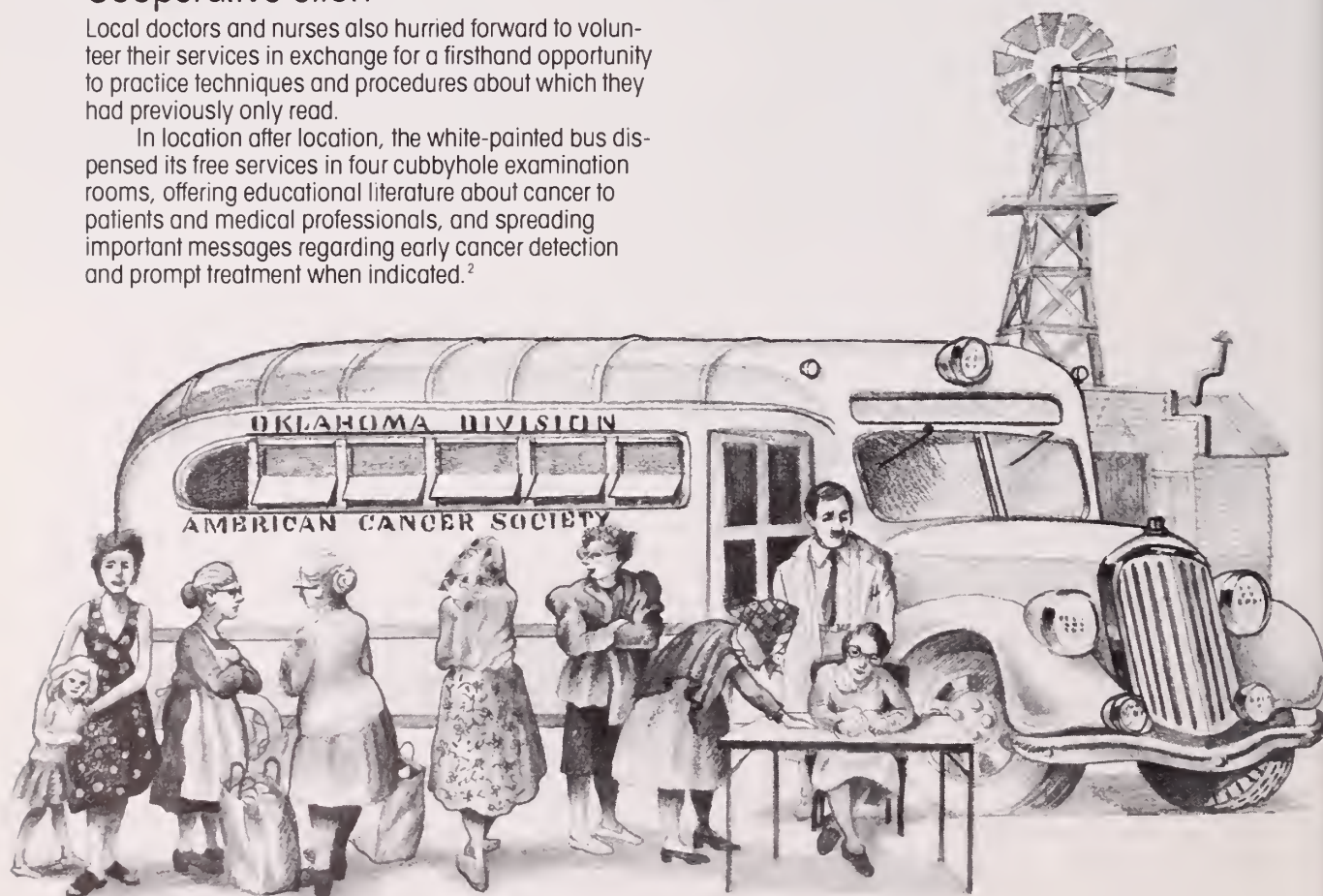
Local doctors and nurses also hurried forward to volunteer their services in exchange for a firsthand opportunity to practice techniques and procedures about which they had previously only read.

In location after location, the white-painted bus dispensed its free services in four cubbyhole examination rooms, offering educational literature about cancer to patients and medical professionals, and spreading important messages regarding early cancer detection and prompt treatment when indicated.²

The idea caught on

Today, it is not surprising to see a modern medical services vehicle on wheels in shopping-center parking areas, schoolyards or business centers. Community service organizations sponsor and support them all across the country. Unquestionably, they have come a long way in equipment and comfort from the school bus that pioneered vital health services... but *it* was the bus that made medical history.

References: 1. Kone JN. *Famous First Facts*, 3rd ed. New York, The H W Wilson Co., 1964, p. 367. 2. Data on file, Hoffmann-La Roche Inc., Nutley, NJ.



When the history reveals anxious depression...

For the estimated 70 percent of nonpsychotic depressed patients who are also anxious,¹ Limbitrol provides both amitriptyline, specific for symptoms of depression, and the effects of Librium® (chlordiazepoxide HCl), the tested and dependable anxiolytic. Limbitrol is, therefore, a better choice for these patients than dual agents that contain a phenothiazine, a class of antipsychotic drugs used infrequently in nonpsychotic patients.¹

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- Late insomnia—89%
- ☐ Gastrointestinal upset—73%

In two multicenter studies, only 1.9% of Limbitrol patients experienced cardiovascular side effects.³

Patients should be cautioned about the combined effects with alcohol or other CNS depressants and about activities requiring complete mental alertness such as operating machinery or driving a car.

References: 1. Rickels K: Drug treatment of anxiety, in *Psychopharmacology in the Practice of Medicine*, edited by Jarvik ME, New York, Appleton-Century-Crafts, 1977, p. 316. 2. Feighner JP et al: *Psychopharmacology* 61: 217-229, Mar 1979. 3. Data on file, Hoffmann-La Roche Inc., Nutley, NJ.

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LIMBITROL TABLETS (R) **Tranquilizer—Antidepressant**

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief at moderate to severe depression associated with moderate to severe anxiety

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use; then initiate cautiously, gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction.

Warnings: Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses. Myocardial infarction and stroke reported with use of this class of drugs.) Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage, withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline, symptoms [including convulsions] similar to those at barbiturate withdrawal for chlordiazepoxide).

Precautions: Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated. Sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

Adverse Reactions: Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.

The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs.

Cardiovascular: Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke.

Psychiatric: Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido.

Neurologic: Incoordination, ataxia, numbness, tingling and paresthesias at the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns.

Anticholinergic: Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract.

Allergic: Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus.

Hematologic: Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia.

Gastrointestinal: Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue.

Endocrine: Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels.

Other: Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Overdosage: Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. IV administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

Dosage: Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single h.s. dose may suffice for some patients. Lower dosages are recommended for the elderly.

Limbitrol 10-25, initial dosage at three to four tablets daily in divided doses, increased up to six tablets or decreased to two tablets daily as required. Limbitrol 5-12.5, initial dosage of three to four tablets daily in divided doses, for patients who do not tolerate higher doses.

How Supplied: White, film-coated tablets, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) and blue, film-coated tablets, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500, Tel-E-Dose® packages of 100, Prescription Paks of 50.

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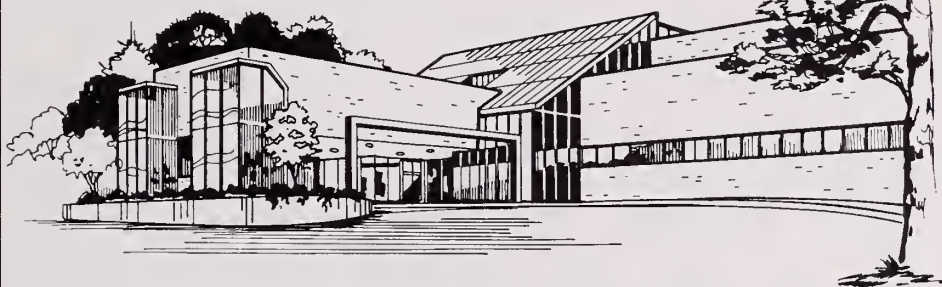
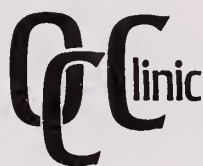
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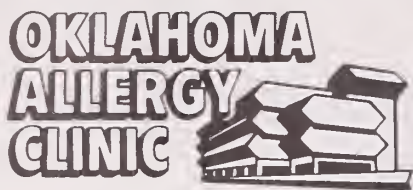
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Index to Advertisers

American-Medi Lease	xiii
American Medical International, Inc.	xxxii
The Arthritis Clinic	xxvii
Bank of Oklahoma	xi
Boots Pharmaceuticals, Inc.	xvi, xvii
Boyle & Company/Pharmaceuticals	xii
The Chickasha Clinic	xxvii
City of Faith	i
C. L. Frates & Co., Inc.	82
Glass-Nelson Clinic	xxviii
Harsha Orthopedic, Inc.	xxxv
International Conferences	xxxii
Eli Lilly and Company	ix
McAlester Clinic	xxviii
Medical Arts Clinic of Ardmore	xxix
Medical Arts Laboratory	xxix
Mid-Continent Region	xxxii
Oklahoma Allergy Clinic	xxx
Oklahoma City Clinic	xxv
Oklahoma Hand Surgery Center, Inc.	xxx
Oklahoma Plastic & Reconstructive Surgeons, Inc.	xxxii
Oklahoma Cardiovascular & Thoracic Surgery Associates, Inc.	xxiv
Orthopedic & Arthritis Center	xxx
OSMA Group Life Insurance Trust	x
Pension Consultants, Inc.	82
Pfizer Laboratories Division	iv, v
Plastic & Reconstructive Surgery Clinic, Inc.	xxx
PLICO	inside front cover
Raphael Center Hospital	xxiii
Roche Laboratories	back covers, vi, vii, viii, xiv, xv, xviii, xix, xx
Ted Rodgers, Wilshire Garden Office Park	84
Shawnee Medical Center Clinic	xxx
Staff Leasing	ii
Timberlawn Psychiatric Hospital	xxiii
Tulsa Adjustment Bureau, Inc.	78
The Upjohn Company	xx
Urological & Genitourinary Surgery	xxxv
Willow View Hospital	xxvi
Wilshire Garden Office Park	84
xxxvi	

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NEWS

Members of the Oklahoma State Medical Association, the constituent societies of the association, and all readers in general are invited to supply news items of general interest to the profession.

ADVERTISING

All advertising copy must be approved by the Editorial Board before acceptance for publication. General and miscellaneous advertising rates will be sent on request.

EDITING SERVICE

The Editorial Board reserves the prerogative to submit contributions to a Medical Editing Service when warranted. If such is felt necessary, the Editor will contact the author for approval, informing him that there will be a modest charge for this service.

REPRINTS

Authors will receive reprint order forms from the Transcript Press, P.O. Drawer 1058, Norman, Oklahoma 73070, prior to final publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

BACK ISSUES

Microfilm copies of back issues of *The Journal* may now be purchased from University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

OKLAHOMA STATE MEDICAL ASSOCIATION

NOW IS THE TIME to make your plans to attend our state convention, scheduled for May 4-7, 1983, in Tulsa's new and beautiful Excelsior Hotel. While our physicians attend their "Medicine On The Move: Technology and Trends '83," spouses will participate in a "Color Me There" theme. Auxilians will be challenged to become "Involved, Creative, Informed, Active, Beautiful, and On the Go." You'll understand this when you receive your official invitation.



In addition to the program mentioned above, we are once again honored to have our current National President of the American Medical Association Auxiliary as our very special guest.

Mrs Betty (Torrence P. B.) Payne, assumed the office of President of the American Medical Association Auxiliary at the organization's 1982 Annual Convention in Chicago; she has served the national organization for a number of years.

On the state level, Mrs Payne currently is the AMA Auxiliary consulting advisor. She has held almost every other state office and served on numerous committees. As state children and youth chairman, she worked statewide with the

medical society's Veneral Disease Mobile Unit, and introduced the Smoking Sam program to the local school. On a county level she is a past-president and served in other offices.

Mrs Payne has volunteered extensively in the community, and is active in the Junior League, her local hospital auxiliary, day nursery, cerebral palsy society, United Fund, and community garden club. She is listed in "Outstanding Women in Orange County."

Born Vasilia Stavrides in Athens, Betty Payne came to Canada with her parents on assignment with the Greek government. After graduation from McGill University, Montreal, she met and married her husband, who was completing his residency at a Canadian hospital.

A pathologist, Dr Payne is currently a delegate to the New York medical society and serves on the board of his county medical society.

The Paynes have two daughters, a son and a granddaughter.

Betty Payne is a woman with many interests: dancing, poetry, gardening, classical music, and gourmet cooking. She is fluent in Greek, French, and English and has traveled extensively.

Come meet, visit and hear her. You'll be glad you did! □

M. Joe Crosthwait, MD, a charter member of the staff of Midwest City Memorial Hospital and an Oklahoma delegate to the American Medical Association, has been appointed to the AMA's Work Group on National Health Policy Agenda. He is one of 18 private physicians in the United States to be selected from a group of 83 nominees. The Work Group on National Health Policy Agenda is formulating a framework to assist decision makers involved in making health policy decisions nationwide. The group includes representatives from medicine, business, labor, and other segments of society. Crosthwait also serves as chairman of the OSMA Council on Professional and Public Relations.

Tulsa's St John Cardiovascular Institute will hold its third annual symposium, "Current Clinical Concepts," on April 8-9, 1983, at the Tulsa Excelsior Hotel. The guest faculty will be headed by W. Proctor Harvey, MD, professor of medicine and director, Division of Cardiology, Georgetown University Medical Center. The symposium is designed for physicians, critical care nurses, staff nurses, and technicians. The program has been certified for nine hours of AMA Category I credit for the Physicians Recognition Award. Symposium information is available from LoRayne Whitehead, MSN, St John Medical Center, 1923 South Utica, Tulsa, Oklahoma 74104, (918) 744-2828.

The American Medical Association will hold a "Symposium on Drinking Water and Human Health" on April 7-8, 1983, at the Washington Hilton Hotel in Washington, DC. The meeting will be cosponsored by the Office of Drinking Water of the US Environmental Protection Agency. Speakers will outline the effects on human health of a broad range of biological, radioactive, and chemical agents in drinking water and will review the relationship of organic pollutants in water to the frequency of cancer in humans. Other topics include the relationship of sodium content and hardness of drinking water to cardiovascular disease, the setting of standards for safe drinking water, and the role of local, state, and fed-

eral agencies in improving drinking water quality.

The OSMA Council on Professional and Public Relations is developing a patient survey brochure for use by physician members in pinpointing problem areas within their medical practices. The brochures will be distributed free to physicians upon request. Survey questions cover appointment policies, office facilities, treatment by office staff, communication between physician and patient, and quality of medical care. OSMA members will be notified as soon as the brochures are ready for distribution.

Cardiologist Zaheer U. Baber, MD, Oklahoma City, has been elected to fellowship in the American College of Cardiology. Dr Baber is on the staff of Midwest City Memorial Hospital. The American College of Cardiology, a 12,000-member organization, is dedicated to providing optimal care for persons with cardiovascular disease to promoting research and educational activities aimed at disease prevention.

The Southern Medical Association has scheduled two Medical Staff Leadership Seminars. The first is set for March 18-20, 1983, at Longboat Key Club, Sarasota, Florida; the second is set for April 22-24, 1983, at the Hilton Head Marriott, Hilton Head, South Carolina. Cost for each seminar is \$220 for members and \$275 for nonmembers. For information contact Jeanette Stone, Southern Medical Association, 2601 Highland Avenue, PO Box 2446, Birmingham, Alabama 35201, (205) 323-4400.

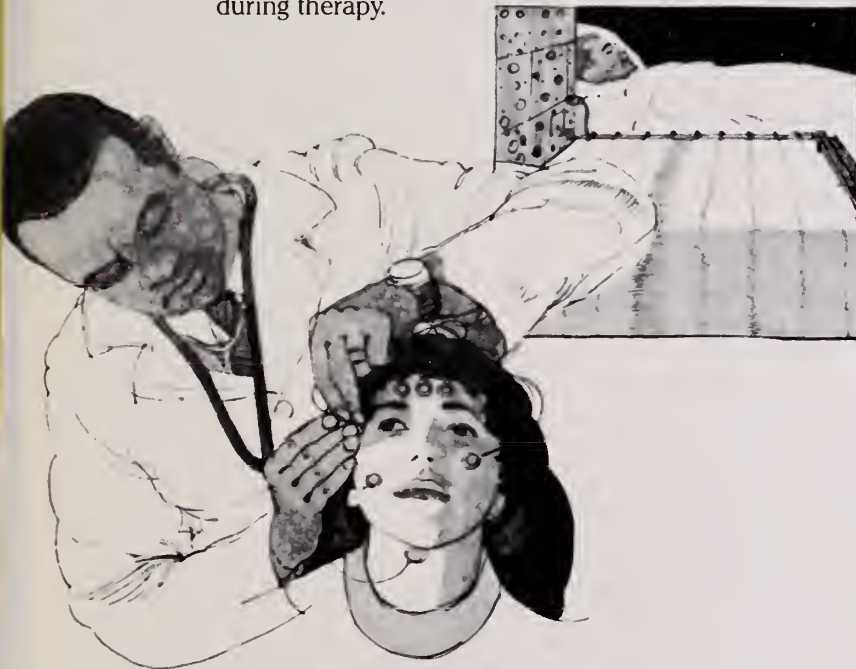
Family practitioner Keith I. Bernhardt, MD, will serve as chief of staff at Midwest City Hospital for 1983. Dr Bernhardt received his BS in chemistry and biology from Southwestern Oklahoma State University in Weatherford and his MD from the University of Oklahoma Medical School. He joined the medical staff of Midwest City Memorial in 1965. □

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sleep laboratory in the investigation of sleep and sleep disturbances. Scientific exhibit at the 124th annual meeting of the American Psychiatric Association, Washington, DC, May 3-7, 1971. 12. Pollak CP, McGregor PA, Weitzman ED: The effects of flurazepam on daytime sleep after acute sleep-wake cycle reversal. Presented at the 15th annual meeting of the Association for Psychophysiological Study of Sleep, Edinburgh, Scotland, June 30-July 4, 1975. 13. Data on file, Hoffmann-La Roche Inc., Nutley, NJ.

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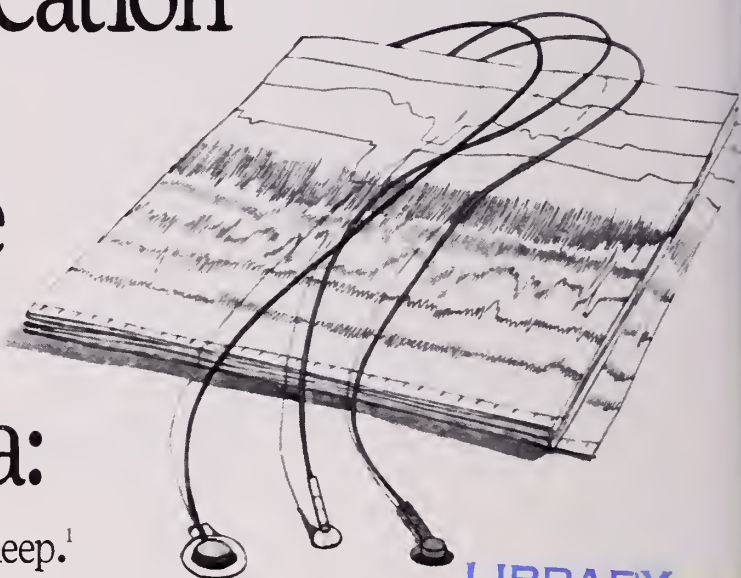
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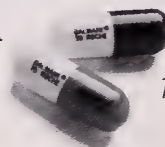
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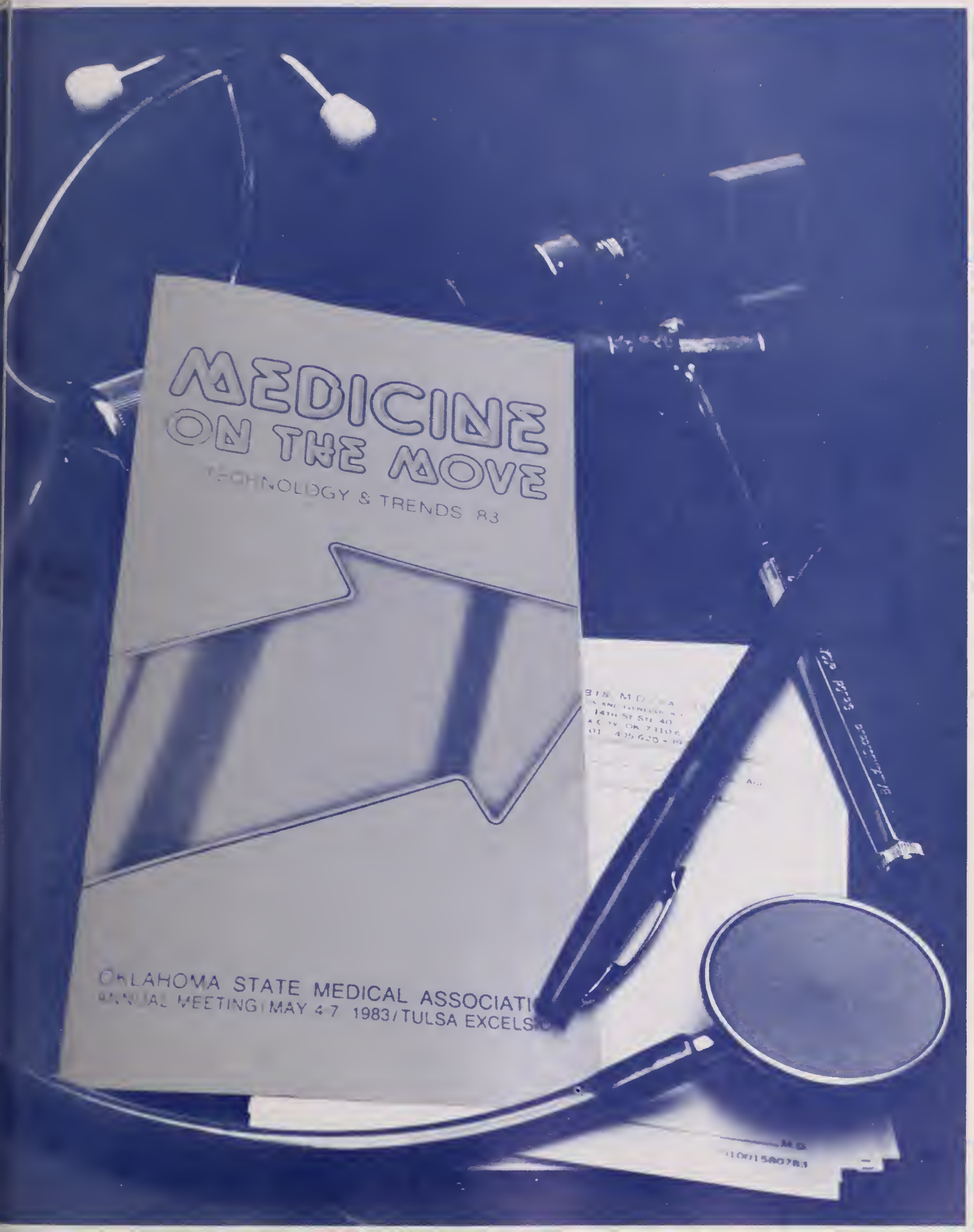
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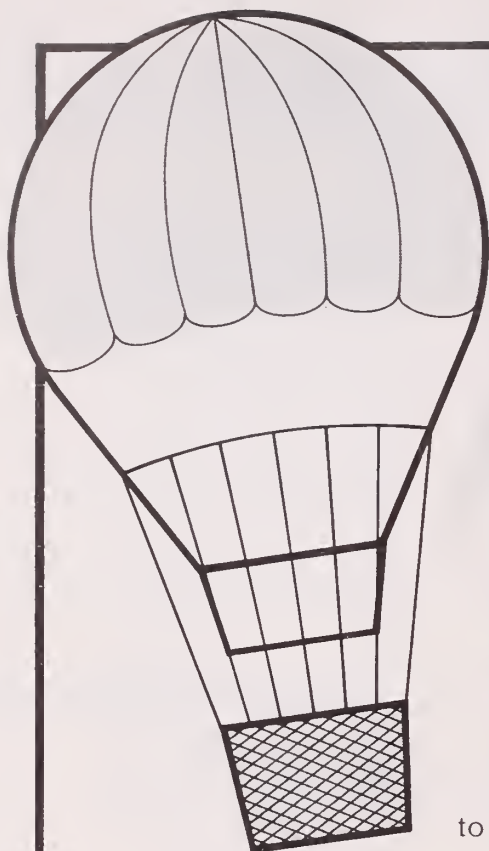
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CONTENTS

- 85 Teach More; Test Less
86 President's Page
87 Hospice Care Without Hospice,
Dale R. Jarolim, MD, FACP
90 Health Care Priorities in High-Need
Populations, *Richard J. Pels, BS*
94 Medical Manpower in Oklahoma in the Decade of the
Eighties, *C. S. Lewis, Jr., MD, Hugh D. Tidler, and Mary*
Piscitello
102 News From the Oklahoma State Department of Health
104 Official Program OSMA Annual Meeting
107 Registration and Ticket Function Information
108 HCFA Selects Aetna to Serve as
Medicare Part B Carrier
108 Board of Trustees Elects Physicians as Life Members
111 OSMA Sponsorship Approved for Film on Drunk Driving
111 AMA Says Drunk Driving Laws
Need Toughening Nationwide
111 Auxiliary Day at the Legislature
112 Deaths
112 In Memoriam
vii Streamlined Appeals Process Adds
to CHAMPUS Efficiency
vii Miscellaneous Advertisements
xxxviii List of Advertisers
xxxix Auxiliary
xl The Last Word

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Teach More; Test Less

Defensive medicine can be practiced without increasing the cost of medical care for our patients. In order to do this we must first accept the fact that we are not divine, our word is not gospel and our knowledge is not perfect. We must learn to confer with rather than dictate to our patients. We must explain diagnostic possibilities, therapeutic options and prognostic variables. We must become the teachers of our patients and their families and literally earn our title as "doctors."

All of this takes time to accomplish, and lots of conversation. But the time we spend talking to our patients, enlisting their curiosity in our search for the right diagnosis, the most appropriate treatment and the best prognosis will gain infinitely greater results than a dozen tests ordered in the name of defensive medical practice; a dozen tests which we also have ordered our patients to pay for, without so much as asking their permission.

Once informed, most of our patients can make prudent decisions concerning essential diagnostic and therapeutic procedures and select those which are most compatible with their wishes and our advice. For such an arrangement to produce favorable results how-

ever, we must make sure that we understand our patients' wishes and that they understand our advice. We must define alternatives and options and present them in the order of our preferences, encouraging our patients to accept them in the order of their preferences. Since price tags often exert powerful influences in any selection process, it is our responsibility also to be well informed about the costs of our recommendations and insure that our patients consider those costs in their deliberations and decisions.

When the understanding is complete and the decisions are final, a brief documentation can be prepared and signed, employing the same procedures involved in obtaining informed consent. Then the task is done. Mutuality of the contract is established and is a matter of record.

Using this approach we will save our patients millions of dollars we now require them to spend for our protection and their medical care. Furthermore, we will be practicing truly defensive medicine while regaining a position of respect and assuming, once more, the role of compassionate professionals.

Also, it is very likely that we will be spending fewer hours in the courtroom and fewer dollars for liability insurance. *MRJ*

As my term of office as your president comes to an end, and we welcome our new officers under the presidential leadership of George Kamp, MD, of Tulsa, the past year comes into more vivid focus, and several subjects come to mind as having been outstanding during the year. It has been a most interesting time, and has introduced me to many people, events and perspectives not previously known, and broadened my views and horizons beyond any scope previously conceived.



As a functioning organization the OKLAHOMA STATE MEDICAL ASSOCIATION demonstrates the efficiency of its staff, and one cannot begin to appreciate the dedication, inventiveness, concern and devotion of all the staff members until the close association of operating the society on a day to day basis has been experienced. They are the unsung heroes of the OSMA, and my appreciation for their efforts and loyalty knows no limits.

Our Executive Director, Mr David Bickham, and his executive staff, continue to provide the help and guidance and innovative ideas necessary for the background of the activities of all of us, and the execution of the various projects and activities of the OSMA hinges on their devotion and genuine concern for the medical profession and our organization. I cannot thank them enough, either individually or collectively, for their help and support during the past year.

Over many years, Louise Martin has received the accolades of all concerned with her many wonderfully performed duties at our headquarters, but her work with the *OSMA JOURNAL* is the shining star in her firmament and must receive my highest commendation.

The auxiliary, under the outstanding leadership of Betty Edge, has continued its unswerving service to the OSMA, demonstrating the loyalty to all our projects for which it is famous. All our thanks, underlined many times, go to you and all your charming auxiliaries, Betty.

Our Councils and various committees have performed well, and must be recognized for the invaluable service they render in contributing to the image and well being of the OSMA. Without these groups,

much of the important activities of our federation would cease and it would become a hollow shell.

One of the most impressive concepts of the year has been the first-hand and intimate realization of the regard and respect held by the general public, legislators and other public officials, and officials of the American Medical Association, for our organization and the principles it upholds. This attitude speaks highly for the work and public image of our staff, and for our officers, Board of Trustees, House of Delegates and for our Delegates and Alternate Delegates to the AMA. The maintenance and further improvement of that image will continue to be a high priority by our staff and officers.

The honor of serving as the president of the Oklahoma State Medical Association has enriched my life both personally and professionally, and my thanks go to all of you for this opportunity, and for your support.

The practice of medicine is undergoing significant changes, some drastic, which will continue at an increasingly frantic pace, and which will require great concentration of effort by our society to maintain quality medical care. Fee-for-service medical care, as we have known it, is confronted with governmental and private sector schemes for cost containment which are now overtly, rather than covertly, devoted only to saving money. Quality care and preservation of mainstream care for all patients have been pushed far into the depths of the cost containment maelstrom, and will surface only through the concerted efforts of the individual medical practitioner and his organized medical societies. Competitive activities of doctors and groups of doctors are not new or evil, but when spiked with threatened withholding of third party and governmental payments, or other disciplinary measures giving additional financial burden or threat to the recipients of these benefits, the pot may boil to the utmost and the entire concept result in the suppression of medical care to its lowest level of function with quality of care becoming an unknown, or ignored, concept. We must not only maintain our own devotion to quality, but we must foster such concerns in hospital administrations by closer and more forceful aid to their efforts to survive the imminent onslaught of tight cost containment from all third party payors.

John A. McIntyre, MD

Hospice Care Without Hospice

DALA R. JAROLIM, MD, FACP

Are hospices really necessary? The primary physician/office nurse team alone can provide efficient palliation. Continuity of care and symptom control are crucial.

Over the past five years, much has been written on palliative care, death, and dying. The hospice movement began in England and has spread across the United States with free-standing community hospice, hospital-affiliated hospice, and visiting nurses' associations offering hospice care.¹ Integral to these plans is the concept of continuity of care with teams of professionals and trained volunteers making home visits. Symptom control and psychological support for patient and family are emphasized. Should a home death be desired, the team helps to prepare the family and may actually participate in the vigil. The small-

lest of these hospice units consists of a physician-medical director (usually separate from the primary care physician and/or oncologist), a nurse, a pharmacist, a psychologist, a social worker, a director of volunteers, and volunteers. Separate charges generally are made for the team's services.

In many communities, the resources are not available to provide dying patients with this wealth of manpower. The experience of cancer patients affiliated with the community-based Tulsa Medical College has shown that palliative care and home death are possible without a formal hospice program.

Community Experiences Reported

The Tulsa Community Internal Medicine Center opened in July 1978, serving outpatients of three large private hospitals in Tulsa which form the Tulsa Medical Education Foundation. In conjunction with the University of Oklahoma Tulsa Medical College, the center conducts a weekly clinic for oncology patients. In April 1980, the newly opened Veterans Administration Tulsa Outpatient Clinic also began a weekly oncology clinic. Residents and faculty participate in both clinics, and their experience forms the basis for this report. One physician runs both clinics, and nurses

provide continuity of care. Existing community resources such as Tulsa City-County visiting nurses and counselors from Tulsa Psychiatric Center are utilized, but no person has been hired specifically to provide palliative care.

The records of 50 patients who did not have access to hospice services were reviewed to characterize their terminal illnesses. Date of original diagnosis of cancer, type of cancer,

"Our experience . . . has shown that terminal care can be provided to cancer patients easily and efficiently by the primary physician and office nurse."

mode of therapy, date of relapse, date of initiation and place of palliative care, date and cause of death, and primary caretaker were recorded.

Terminal care for 50 patients was provided by physicians of Tulsa Community Internal Medicine Center. Thirty-four of these patients received significant palliative care in the home. Sixteen patients did not: 4 patients lacked family support, 5 died unexpectedly prior to the need for palliation, and 7 were hospitalized at doctor or patient request.

There were 28 hospital deaths, 18 of which were clinic patients who had seen more than one resident physician. Ten patients were cared for by one physician: three were private patients and seven were Veterans Administration patients. Three of these patients had prolonged palliative care in the home, but were admitted to die in the hospital.

Dala R. Jarolim, MD, was graduated from the University of Oklahoma College of Medicine in 1975. She is certified by the American Board of Internal Medicine/Medical Oncology and is presently fulltime assistant professor at the Tulsa Medical College. Dr Jarolim is a Fellow, American College of Physicians and a member of the Alpha Omega Alpha and Eastern Cooperative Oncology Group.

Nineteen patients died at home: 3 were clinic patients with multiple resident physicians, 3 were private and 13 were Veterans Administration patients of a single faculty physician.

Three patients had relatively long periods of palliation: one breast cancer patient for six months and two colon cancer patients for eleven and eight months. Excluding these three, the mean length of palliative care was 1.8 months.

Palliative Care Requirements

Our experience at Tulsa Medical College in the Tulsa community hospitals has shown that terminal care and home death can be provided to cancer patients easily and efficiently by the primary physician and office nurse. Teams of highly skilled professionals and trained volunteers are a luxury and are unnecessary for care of the patient with few financial resources.

Successful palliative care requires:

1. *Physician knowledge of symptom control.*

The use of routine and ample amounts of oral narcotics to prevent rather than treat pain is very important.² The use of prophylactic measures against the accompanying constipation and of antiemetics to control nausea needs to be emphasized, as well as the use of antidepressants and hypnotics when necessary. Drug interactions and common side effects of previous therapy need to be considered.

"Teams of highly skilled professionals and trained volunteers are a luxury and are unnecessary for care of the patient with few financial resources."

Patient comfort is paramount. Commodes, hospital beds, indwelling catheters, eggcrate mattresses, wheelchairs, and hydraulic lifts can be obtained for home use, often at no charge through organizations such as the American Cancer Society.³

2. *Patient and family education of the disease manifestations and its treatment.*

When forewarned of a certain symptom,

the patient and family are less frightened at its occurrence. The disease may be incurable, but most symptoms can be treated in some way; this ongoing care can be a positive experience for the patient and family. Many patients may wish to discuss the anticipated mode of dying. Unrealistic fears of horrible, painful deaths may be discovered and alleviated with the knowledge that many people simply become less responsive and slip into a coma prior to death.

3. "Bonding" among patient, nurse, physician, and family. Formal counseling or group sessions with psychologists or social workers are not necessary for verbalization of anxieties and fears. Tension often develops between spouses when one is terminally ill, and talking with each separately at some point allows both to talk freely. An understanding, reassuring staff is usually all that is needed to provide emotional support.

Palliation is much easier with continuity of care, that is, with the same physician and nurse at each office visit and available between visits for telephone consultation. The patient's condition is known then in much detail, and decisions can be made with the advantage of prior experiences. In 89.5% of the home deaths, a single physician was responsible for the continuous care of the patient. Of the hospital deaths, 64.3% had been seen by multiple doctors, perhaps a factor in determining the location for the terminal care.

Home visits by nurses are desirable, but not

essential. If the spouse has been educated about symptoms, signs, and treatment, he or she generally is an excellent observer and knows the status quo. Meaningful changes in condition and increases in pain are easily recognized and reported by the spouse.

When the patient becomes too weak to come to clinic, the spouse continues to keep the regularly scheduled visit. This insures close contact between staff and family on a routine basis during office hours, and emergency phone calls for unexpected events are rare. The routine office visit emphasizes the continued interest and support of the staff. Hospitalization is always an option should the patient or family desire it.

Arrangements for pronouncement and pick-up by the funeral home are made prior to death so that trips to the hospital are unnecessary. Follow-up phone calls to the spouse are made, and return office visits are encouraged so that the grieving may be shared by the staff.

Having cared for 26 terminal patients in hospital and 19 terminal patients at home, we have found that our experience with the latter seems to provide the patient with more comfort and love at a much lower cost during the final weeks of life.

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Health Care Priorities in High-Need Populations

RICHARD J. PELS, BS

People in underserved areas continue to suffer from poor health conditions. Recent and historical trends suggest that merely providing better access to doctors will not correct this inequity.

Many attempts to improve the health of poor people in this country have surfaced in recent years. Government officials, physicians, and concerned citizens have focused their attention on encouraging more doctors and clinics to locate in high-need areas, believing that poor people must have greater access to medical care. This focus emphasizes medical intervention as the priority of health policy.

Since poor living conditions underpin many of the health problems suffered by people in these regions, however, medical intervention is only palliative. Resolving the disparity between the level of health in these regions and that enjoyed by most Americans would entail changing the priorities of health policy from

delivery of medical resources to improvement of substandard living conditions.

Medical intervention has proven inadequate when utilized as the sole means of improving health conditions among high-need populations: economic disadvantage continues to correlate well with low levels of health. In 1976, for example, families with incomes in the lowest fifth nationally (less than \$6,000) reported almost twice the national short- and long-term restriction of activity from health-related problems; this occurred despite their utilization of physician services at rates equal to the rest of the population.¹

Disparities in both income levels and infant mortality rates between whites and nonwhites provide further examples of this correlation. While the percentage of nonwhites earning less than \$6,000 fell from 75.8 percent in 1970 to 49.4 percent in 1978, the rate for whites fell from 55.6 percent to 30.8 percent.² Thus, the disparity between white and nonwhite income levels has persisted. Infant mortality rates reveal a similar trend: although the decline in the nonwhite rate has paralleled the downward trend in the white rate, the 1979 nonwhite rate of 21.7 deaths per 1,000 live births was still twice that for white infants.²

Medical intervention, in the form of neonatal intensive care, has reduced infant mortality among both impoverished and more affluent people; this is manifested by a reduction in

deaths of low birth-weight infants for all income groups.³ But a recent California study showed not only a greater proportion of low birth-weight infants born to nonwhite mothers but also that this gap has widened over the past 20 years.⁴ Low birth-weight, which correlates with income level,³ is a strong predictor of increased infant mortality⁵ and may well account for the persistently higher death rates for nonwhite infants; again, despite medical intervention, disparities in health continue to coexist with disparities in incomes.

Medicine's historic role in the improved survival noted over the past century supports the contention that medical intervention cannot satisfy the health needs of high-need populations. Thomas McKeown, noted physician and social historian, observes that a reduction in deaths from infectious diseases accounts for most of the decrease in childhood mortality. Further, the decline in deaths from such diseases as tuberculosis, bronchitis, pneumonia, and influenza had begun by the turn of the 20th century, well before the advent of antibiotic treatment 40 years ago (see Fig 1).

The antibiotic streptomycin, for example, was developed in 1947 and represented the first effective treatment for tuberculosis. While this drug lowered the death rate from tuberculosis in England and Wales by 50%, it has contributed only 3% to the overall decrease in the death rate since the early 19th century.

"Medical intervention has proven inadequate when utilized as the sole means of improving health conditions among high-need populations."

The same is true for the sulfa drugs, first introduced for the treatment of pulmonary infections in 1938. By that time, the death rate in England and Wales from bronchitis, pneumonia, and influenza had fallen from approximately 2,800 deaths per million at the turn of this century to just slightly over 1,500 deaths per million.

The fall in these death rates coincided with an increase in food supplies and with the introduction of basic hygienic measures such as water purification and efficient sewage dis-

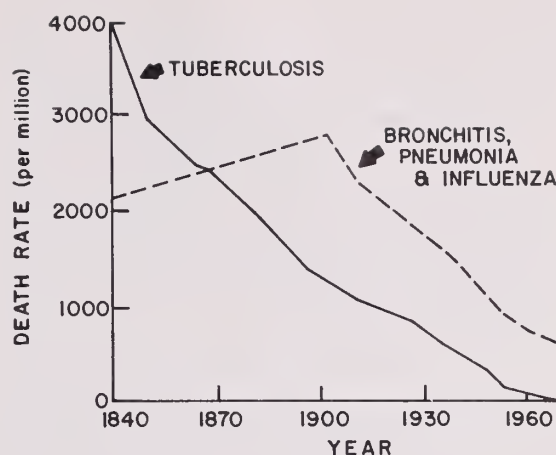


Figure 1. Adapted from McKeown.⁶ Decline in death rates from pulmonary diseases.

posal. Thus, public health measures aimed at eradicating substandard living conditions, not medical intervention, correlate best with the improvement in health noted over the past century.⁶ Similar trends have been noted for the United States during this period as well.⁷

Public Health Problems Persist

Despite this success, high-need populations today still do not have adequate access to such public health measures; the result is persistence of poor living conditions. Malnutrition, for example, still plagues poor people in some regions of this country. In 1973, 40% of children in South Carolina had unacceptably low hemoglobin levels, pointing to a probable deficiency-state anemia. Most of the children were poor. Also in 1973, the infant mortality rate for migrant worker children was 63 deaths per 1,000 live births, more than three times the national average. And of those migrant children who survived the perinatal period, 36% fell below the tenth percentile for triceps skinfold measurements.⁷

In an attempt to intervene in early childhood malnutrition, Dr Jean Van Duzen of the Public Health Service Hospital in Tuba City, Arizona, implemented a program in 1967 providing feeding formulas for native American infants from the region (see Table 1). While the more recent figures still represent unacceptable levels of malnutrition, the improvements in the latter five-year period are remarkable.

Table 1. Parameters of childhood malnutrition at a Public Health Services Hospital, 1963-1973.⁸

	1963-67	1967-73
Below 3rd percentile on Boston growth curves	30%	14%
Number of admissions for Kwashiorkor and marasmus	44	17
Number of admissions for malnutrition	616	337

Other problems persisting among high-need populations include poor sanitary conditions and crowded, pest-ridden housing. Robert Coles, a child psychiatrist who has made first-hand observations of families and their environments, describes a mother's perception of her home in a northern city:

Here are some of the competing worries Peter's mother must contend with: . . . the cockroaches and mice and rats that get into the building and try to get into her apartment, however tidy she is; the stench from the basement that comes up a well the height of the building and works its way into each room of the entire house; the mosquitoes and flies that come in during the summer when the windows have to be opened but screens are not available; . . . garbage, at best irregularly collected, and so always visible from her kitchen window; . . . the black sooty smoke that the chimneys emit, the result of old, thoroughly inadequate heating systems.⁹

Rene Dubos notes that when these conditions afflicted a larger portion of the population, as in the late 1800s, a social movement evolved to eradicate poverty conditions which fostered disease. He observes that a significant

"Public health measures aimed at eradicating substandard living conditions . . . correlate best with the improvement in health noted over the past century."

contribution to the development of this movement was the fear on the part of middle- and upper-class people of direct spread of disease into their own communities. Thus, outbreaks of cholera, yellow fever, and tuberculosis resulted in the creation of a national board of health, supported by public funds, for the control of water supplies.¹⁰

Historically, improvement of such living conditions has proven the major reason for better health. But how does this model relate to the health problems of poor people today? The geographic isolation of these people greatly impedes the application of such a model. Many live in inner-city slums or outlying rural areas where they seldom come into contact with more affluent people who, in turn, no longer

"In 1973, 40% of children in South Carolina had unacceptably low hemoglobin levels, pointing to a probable deficiency-state anemia."

feel their own health threatened. Further, this isolation eliminates the visibility of the problem: those with legislative and monetary discretion no longer have to witness the malnutrition, poor sanitation, and poor housing conditions which continue to exist.

Impoverished areas need doctors to provide prenatal care and emergency services and to treat both the day-to-day limited illnesses as well as the more chronic debilitating ones. These represent much-needed services; but to expect broader improvements in the health of low-income people merely through increasing access to physicians is presumptuous. Where impoverished living conditions persist, doctors often can do no more than treat the symptoms of these underlying causes of disease: they can prescribe antibiotics for the malnourished child who contracts many infections due to low resistance, they can treat the victims of poor sanitary conditions for parasitic infections, and so on. Since these living conditions contribute to poor health, they reflect part of a society's

Richard J. Pels is a member of the 1983 senior class at the University of Florida College of Medicine. He plans to start a residency program in primary care medicine in July. He is a member of the American Academy of Family Physicians and Physicians for Social Responsibility.

health care practices. In high-need areas, where such problems remain prevalent, their resolution should be the foremost priority of health policy.

Such a mandate would constitute a real, not merely an apparent, effort to rid poor people of the sense of powerlessness which so often pervades their lives. Better nutrition, improved sanitary and housing conditions, and more accessible medical care would lead to better health among these people; this, in turn, could foster a stronger sense of autonomy and increase their opportunity for access to a higher economic standard of living. However, the cost of such a program and its prospects for allowing poor people better access to a now-protected status are certain to arouse opposition among many individuals currently in power. Thus, it will be necessary for poor people to join with concerned government officials and medical

professionals to initiate the political action that will result in better living conditions and, ultimately, better health.

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Medical Manpower in Oklahoma in the Decade of the Eighties

C. S. LEWIS, JR., MD
HUGH D. TIDLER
MARY PISCITELLO

Much has been written over the past 25 years in regard to the number of physicians in the United States and the accessibility of medical care to the population. In this paper we will attempt to review briefly the programs that have been put into effect over the past decade to increase the number of physicians being trained, review the current status of physician manpower in the United States and in Oklahoma, and project manpower numbers to the year 1990 as accurately as possible.

The purpose of this review of information and projections is to assess how close to "on target" physician manpower production in Oklahoma is at present.

Review of Development of Medical Manpower Policy — 1959 to 1983

National

The first report that called attention to the shortage of doctors in the United States was published in 1959 as the Bane report.¹ This

report recommended that 20 new medical schools in addition to the 91 that were functioning at the time be established. It also recommended that the graduating class be increased from 8,500 to 11,000. The stated goal was to increase the number of physicians in the United States so that the ratio would be 141 physicians to 100,000 population by the year 1975.

In 1970 the Carnegie Commission on Higher Education published *Higher Education and the Nation's Health*.² Among other suggestions this report recommended that nine new medical schools be formed. At that time there were 106 active and 17 developing medical schools. This report also suggested that the medical school class size be increased by 50%.

The second Carnegie Commission Report, *Progress and Problems in Medical and Dental Education* was published in 1976.³ This report pointed out that the influx of foreign medical graduates might be increasing at a rapid enough rate to meet the manpower goals that had been established with the addition of no more new medical schools. At that time there were 114 active medical schools and 13 developing schools. The graduating class total was 15,300.

The report of the Graduate Medical Education National Advisory Committee to the Secretary, Department of Health and Human

Services⁴ was released in 1980 and recommended a reduction in class size because of projections of an overproduction of physicians. The report indicated that class size (MD and DO) had risen from 8,500 to 18,300 (17,200 MD graduates and 1,100 DO graduates) in the previous 14 years and a reduction in class size of 17% was recommended.

Oklahoma

In 1959 Dr Kelly West⁵ reported that Oklahoma had 2,240 MDs and 353 DOs practicing actively. Based on the physician to population ratio at that time, he calculated that Oklahoma needed an additional 870 physicians at that time to bring the state up to the national average of physician-to-population ratio.

In 1971 the State Regents for Higher Education for the State of Oklahoma documented the needs expressed by Dr West and suggested educational policies to meet these needs.⁶

In 1973⁷ and in 1975⁸ the Oklahoma State Department of Vocational Technical Education reported that Oklahoma had 2,500 MDs and

450 DOs. The report suggested that Oklahoma needed an additional 900 physicians and recommended 180 to 200 new physicians per year to maintain an adequate physician-population ratio after the addition of the 900.

It was noted that in 1974 the University of Oklahoma College of Medicine graduated 131 MDs. Many of these young people were being forced out of the state for postgraduate training because there were only 85 first-year postgraduate training positions available within the state of Oklahoma.⁹

Actions

National

In response to the above reports indicating a need for an increased number of physicians in the United States, there was an increase in medical schools from 91 to 128. The MD class of graduates was increased over this period from 8,500 to 17,200. The number of DOs per graduating class was increased to 1,100 per year.⁴

The number of foreign medical graduates in the United States increased during the decade

POSTGRADUATE TRAINING IN OKLAHOMA 1974-1982

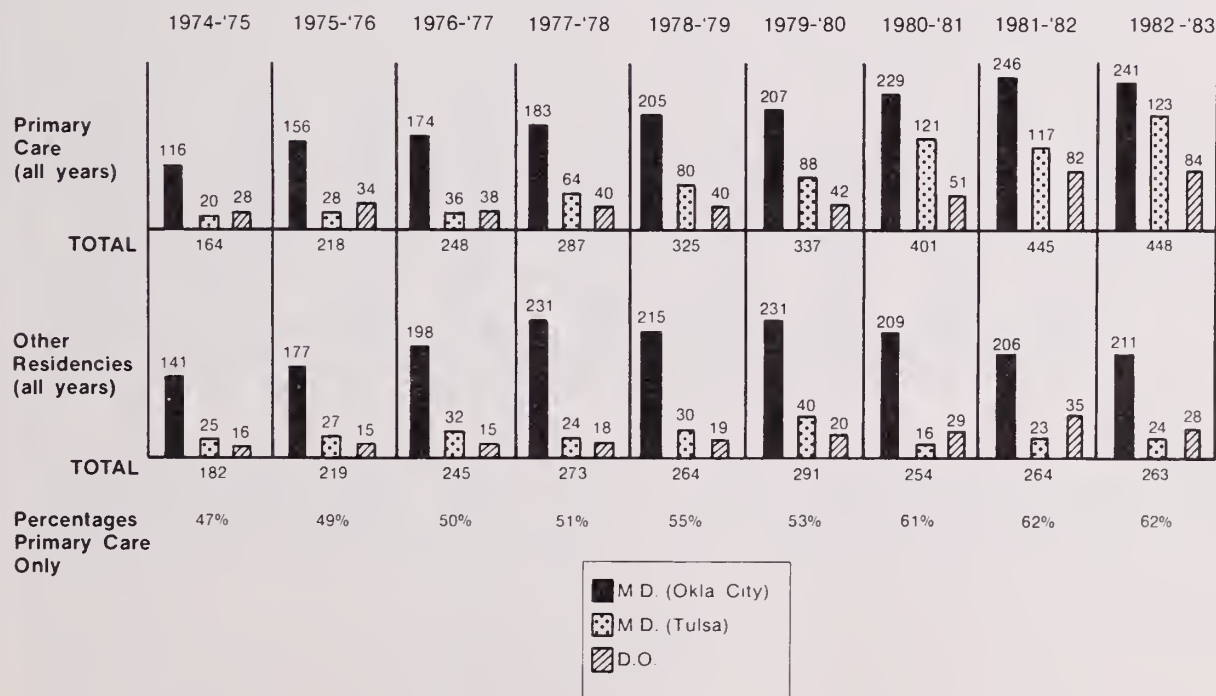


Fig 1 - Internship and residency positions available in Oklahoma by year. The upper set of bar graphs represents primary care residency positions and the lower set represents other than primary care residency positions. The percent of primary care physicians totally has risen from 47% in 1974 to 62% in 1983.

of the 1970s. In 1979 the number of new immigrant physicians began decreasing due to a change in the laws governing immigration of foreign medical graduates.¹⁰

The number of United States citizens graduated from foreign medical schools has been increasing significantly during the 1970's. Approximately 4,700 of these graduates returned to the United States in 1981. The number of first year positions available for postgraduate training in the United States has not increased enough to accommodate this increased number.¹⁰

Oklahoma

During this period the state of Oklahoma has taken positive action to carry out programs to bring the number of physicians available to the citizens of Oklahoma up to the national average and to a number which had been projected as being necessary within the state.

In 1972 the University of Oklahoma Tulsa Medical College was created as a branch program of the University of Oklahoma Health

Sciences Center; the first class of 40 junior students was enrolled in 1974.

The Tulsa Medical Education Foundation, Inc., and the University of Oklahoma Tulsa Medical College signed a contract in 1974 to increase the number of residents in the Tulsa area utilizing the hospitals that form the consortium of the Tulsa Medical Education Foundation, Inc.

The Oklahoma College of Osteopathic Medicine and Surgery was opened in 1974 with a projected class size of 88 students per year.

The Physician Manpower Training Commission legislation was enacted in 1975 and provided a stimulus to increase the number of postgraduate training positions in the state of Oklahoma to match the number of graduating students in both the MD and DO programs.^{9, 11} (See Chart 1 and 2.)

In addition to the support of postgraduate training positions in Oklahoma, the Physician Manpower Training Commission provides funding for two scholarship programs designed to encourage scholarship recipients to return to rural communities to practice medicine. Monies are also available through the Physi-

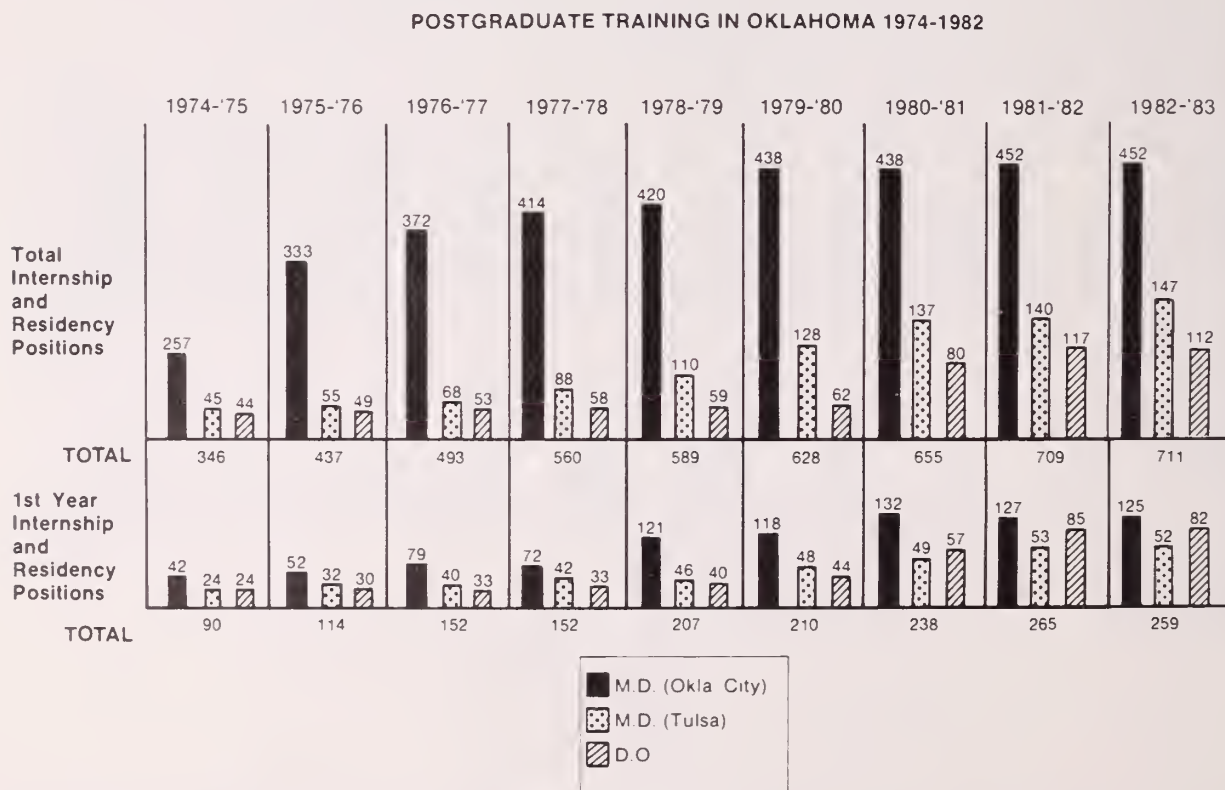


Fig 2 - The upper portion of the bar graphs represents the total number of internships and residency positions by year available in Oklahoma. The lower set of bar graphs indicates the number of first year positions available by year.

OKLAHOMA INTERNSHIP & RESIDENCY FUNDING

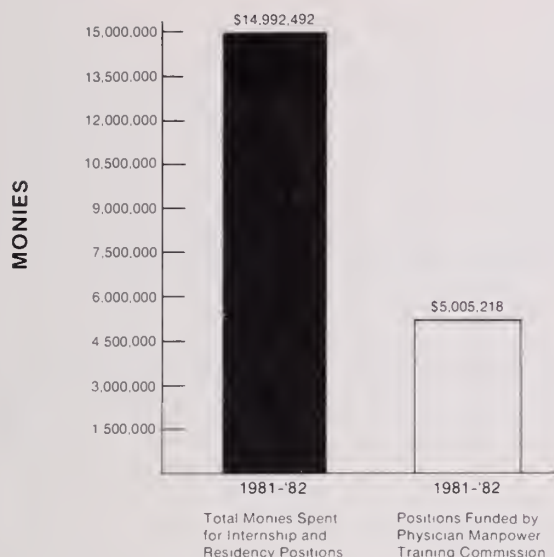


Fig 3 - Total amount of funds from all sources that support internships and residency training programs compared to that portion which is funded through the Physician Manpower Training Commission Budget.

cian Manpower Training Commission to provide Offices of Physician Placement at the University of Oklahoma College of Medicine, University of Oklahoma Tulsa Medical College and the Oklahoma College of Osteopathic Medicine and Surgery. Placement officers at these training institutions encourage graduates to practice medicine in Oklahoma, and primarily to set up practice in rural communities. The Physician Manpower Training Commission funds total approximately one-third of the total cost of postgraduate medical education in Oklahoma (see Chart 3).

Current Status of Medical Manpower National

There are now approximately 18,300 graduates from schools within the United States; 17,200 of these are MD graduates and 1,100 are DO graduates.⁴ In addition there are 4,700 United States citizens who are graduates of foreign medical schools returning to the United States annually for postgraduate education. The ratio of postgraduate-year one applicants to positions is approaching 1:1.¹⁰

The physician-population ratio in the United States in 1981 was 197 per 100,000.⁴

AVERAGE NUMBER OF NEW PHYSICIANS PRACTICING IN OKLAHOMA PER YEAR

	OU	OCOMS	ORU	OTHER	TOTAL
1975-1980	92	31	0	73	196
1981-1990	102	47	5	73	227
Increase	10	16	5	0	31

Fig 4 - Projection of new physicians per year based on the 1975-1980 experience. Source - Physician Requirements of Oklahoma; Provost, University of Oklahoma Health Sciences Center, 1981.

Oklahoma

The population of Oklahoma increased during the decade of the 1970's at a rate of 18.2%. There are currently 176 MD and 88 DO graduates per class in the state supported schools.¹²

The physician-population ratio in Oklahoma in 1982 was 149 per 100,000 population. The number of postgraduate year one positions has been gradually increased so that there is now approximately one position per graduate.¹¹

During the five years 1976 to 1980, Oklahoma physician numbers grew at a rate of 196 physicians per year. Ninety-two were graduates of the University of Oklahoma Health Sciences Center (including Tulsa Medical College) and 31 were graduates of OCOMS. Seventy-three migrated to Oklahoma from elsewhere.¹² (See Fig 4.)

The number of physicians practicing in smaller communities has increased (see Fig 5). This trend has been documented nationally in a study which compared availability of physicians' services by specialty in various sized towns in 23 states in the United States, including Oklahoma, and indicates that the percent of towns that had physicians by specialty category in 1970 and in 1979.¹³

COMPARISON OF PHYSICIANS (M.D.) PRACTICING IN OKLAHOMA by Community Size

	Under 2500	2500-5000	5000-10,000	10,000-100,000	Over 100,000
1975	106	99	184	844	1706
1982	146	112	241	1198	2471
Percent Increase	38 %	13 %	31 %	42 %	45 %

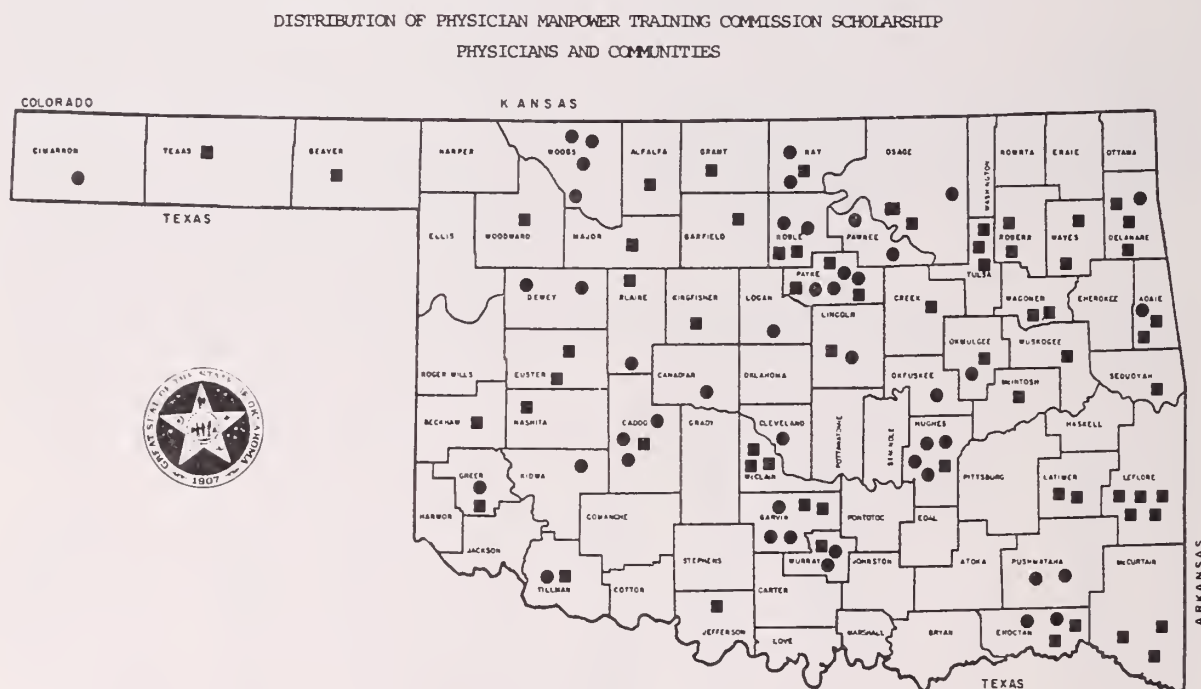
Fig 5 - The percent of increase in MD physicians in towns of various sizes in Oklahoma from 1975 to 1982. Source - Board of Medical Examiners, State of Oklahoma. Statistical Report, 1982.

In Oklahoma there has been a significant increase in the number of MDs in towns of all sizes. From 1975 to 1982 there was a 38% increase in physicians in towns under 2,500 population, an increase of 13% in towns from 2,500 to 5,000, and an increase of 31% in towns of 5,000 to 10,000 population.¹⁴ The rural scholarship program and the community matching scholarship program administered by the Physician Manpower Training Commission have been a positive influence in motivating physicians to practice in rural communities in the state. (See Fig 6.)

National

The GMENAC study released in 1980 indicates that there will be 70,000 physicians in excess of the need in 1990 in the United States if productivity per physician continues to be the same. The overall number of physicians will have increased from 375,000 in 1978 to 536,000 in 1990.⁴ The distribution of physicians by specialty is shown in Fig 7.

Further data collected by Dr Tarlov and associates indicate that among physicians who have been practicing for two to four years



- Community-Matching Scholarship Recipients who have not as yet completed postgraduate training. There are 50 of these recipients who have not as yet returned to towns with a population under 10,000.
- Scholarship Recipients (Rural and Community-Matching) who have already returned to rural communities with a population under 10,000. There are 68 of these physicians who are serving in 32 different towns.

NOTE: A total of 223 students have thus far enrolled in the scholarship programs of the Physician Manpower Training Commission. (137 in the Rural Scholarship Program and 86 in the Community-Matching Scholarship Program.)

Fig 6 - Distribution of Physician Manpower Training Commission scholarships, Physicians by Community.

● Community-Matching Scholarship Recipients who have not as yet completed postgraduate training. There are 50 of these recipients who have not as yet returned to towns with a population under 10,000.

■ Scholarship Recipients (Rural and Community-Matching) who have already returned to rural communities with a population under 10,000. There are 68 of these physicians who are serving in 32 different towns.

NOTE: A total of 223 students have participated in the scholarship programs of the Physician Manpower Training Commission: 137 in the Rural Scholarship Program and 86 in the Community-Matching Scholarship Program.

U.S. PHYSICIAN SUPPLY

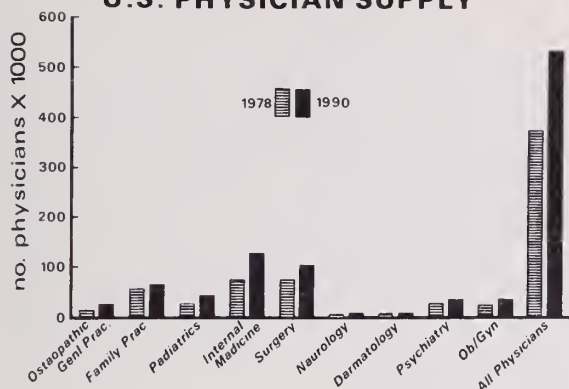


Fig 7 - The projected physician supply in the United States in 1990 by specialty compared to 1978. Source - Report of the Graduate Medical Education National Advisory Committee, DHHS Publication number (HRA) 81-651, 1981.

beyond their training period, 50% are taking positions that are full- or part-time salaried. It is suggested that physician productivity in this group, as measured by numbers of patients seen per unit of time, decreased 10% to 15%.¹⁵

Oklahoma

In projecting the number of students graduating in Oklahoma between now and 1990, the figures indicate that the University of Oklahoma will graduate a net increase of ten per year over the 1975-1980 comparison. Fifty-eight percent of the University of Oklahoma graduates are staying in the state. The Oklahoma College of Osteopathic Medicine and Surgery reports that 53% of graduates from 1975-1980 stayed in the state of Oklahoma. If the same percentage holds true for the

decade of 1980-1990, a net increase of 16 per year will be realized. Oral Roberts University School of Medicine has been estimated to provide five physicians per year on the basis that 11% of the incoming class are residents of Oklahoma will remain in the state. (Fig 8.) Therefore, the additional physicians per year in Oklahoma will increase from 196 per year as experienced in 1975 to 1980 to 225 per year during the 1980s.¹² (See Fig 4.) It is estimated that the physician-population ratio in Oklahoma will increase from 140 in 1980 to 181 in 1990.

Conclusions

How many physicians are enough and how many are too many is not an easy question to answer. The GMENAC report⁴ indicated that the ideal physician-population ratio in the United States would be 191 physicians per 100,000 population. This is assuming that all physicians would continue to produce the same amount of care as before. Current trends among younger physicians indicate that the productivity per physician is decreasing. The Carnegie report in 1970 indicated that more than 200 physicians per 100,000 population is too many.²

It would appear that the projected figures for Oklahoma of 181 physicians per 100,000 population by 1990 is a satisfactory target. (See Fig 9.)

If the current trends continue, the ratio of DO physicians to MD physicians in Oklahoma will increase significantly. In 1982 approximately 13% of the physicians in the state of Oklahoma were DOs. If the current class sizes

OKLAHOMA MEDICAL SCHOOLS CLASS SIZES

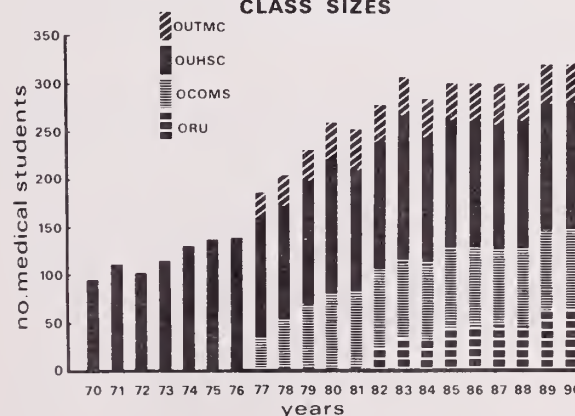


Fig 8 - Class sizes of the Oklahoma medical schools from 1970 to 1990 by school.

Dr Lewis is a practicing internist in Tulsa, Oklahoma who is a Past President of the Oklahoma State Medical Association, a member of the Oklahoma Physician Manpower Training Commission and a Regent of the American College of Physicians.

Mr Tidler is a computer consultant who is responsible for the design and implementation of the Physician Manpower Training Commission Data Bank.

Ms Piscitello, MS, is a research statistician with the Oklahoma Foundation for Peer Review.

continue another decade or two, approximately 30% of practicing physicians in Oklahoma will be DOs.

The steps taken by the state legislature of Oklahoma, the State Regents for Higher Education, and the medical education institutions of Oklahoma have been successful in increasing the number of physicians practicing in Oklahoma in total and in rural areas and these projections appear to be "on target" to meet the needs of the state of Oklahoma in 1990.

STATE & NATIONAL PHYSICIAN : POPULATION RATIO			
USA			
	Active total physicians M.D. & D.O.	Population	Physicians per 100,000 population
1960	259,500	185,370,000	140 a
1970	323,200	204,878,000	157 a
1980	447,470	226,504,825	197 b
1990	536,000	244,000,000	220 b

Oklahoma

	Active total physicians M.D. & D.O.	Population	Physicians per 100,000 population
1960	2,392 c	2,328,284 d	103
1970	2,923 c	2,559,463 d	114
1980	4,238 c	3,025,290 d	140
1990	6,508 c	3,575,893 d	182

Fig 9 - State and National physician-population ratios from 1960 to 1990.

Source -

- A. National Center for Health Statistics, DHEW Publication Number (PHS) 78-1232, 1978.
- B. Report of the Graduate Medical Education National Advisory Committee to the Secretary, Department of Health and Human Services, Volume I, September 30, 1980. (DHHS) Publication Number (HRA) 81-651, 1981.
- C. Statistical Reports: Oklahoma State Board of Medical Examiners and Oklahoma Osteopathic Association.
- D. Oklahoma Employment Security Commission and Physician Manpower Training Commission Data Bank.

The need for an increased number of physicians in the United States was recognized in 1959 and its implications for Oklahoma pointed out in 1969. Programs were implemented to increase the number of graduates by expanding the class size at the University of Oklahoma Health Sciences Center class size, and the formation of the University of Oklahoma Tulsa Medical College and the Oklahoma College of Osteopathic Medicine and Surgery. The Oklahoma Physician Manpower Training Commission programs to increase postgraduate medical education opportunities in Oklahoma and its scholarship programs have been accompanied by a significant increase in the number of physicians in communities of all sizes in Oklahoma including small rural communities. The projected physician-population ratio in Oklahoma in 1990 of 181 physicians per 100,000 population appears to be a satisfactory goal compared with the national goal of 191 physicians per 100,000 population. The current programs and class sizes of the medical schools should be continued at their present size.

Methodology

The Physician Manpower Training Commission Data Bank Project began in July 1982. Sources from which physician data were collected included the Oklahoma State Medical Association, the State Board of Medical Examiners, and the Oklahoma Osteopathic Association. To ensure confidentiality physician names were left off the data base. The data will be updated annually in order to serve the statistical needs of the Physician Manpower Training Commission.

Acknowledgements

We gratefully acknowledge the excellent work of Mr Ralph O. Morgan, Jr., Executive Director of the Physician Manpower Training Commission and to the Oklahoma State Medical Association, the Oklahoma Osteopathic Association, State Board of Medical Examiners, and the Oklahoma Foundation for Peer Review in collecting data and preparing this paper for publication.

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News From The Oklahoma State Department of Health

Hepatitis B Vaccine

The Center for Disease Control of the Public Health Service has requested state health departments to assist in developing a surveillance system to report reactions to the hepatitis B virus vaccine.

To date, CDC has received a report of one case of Guillain-Barre Syndrome in a recipient of the hepatitis B virus vaccine. This case occurred in a 40-year-old male who developed classical GBS approximately three weeks after receiving his first dose of vaccine. As of late January, the center was also investigating two other episodes of neuropathic syndromes which occurred in persons who were reported to have received HBV vaccine.

In October 1981, hepatitis B virus vaccine was licensed by the Food and Drug Administration for the prevention of infections related

to this type of virus. This vaccine has been marketed since June 1982, and an estimated 800,000 doses of vaccine have been distributed in the United States. It was tested prior to licensure in over 6,000 individuals without any severe side effects, but complications occurring at a rate of less than one per 6,000 vaccinees would not have been detected prior to the more general use of the product. With the beginning of widespread use of the vaccine has come a need to document possible low-frequency side effects.

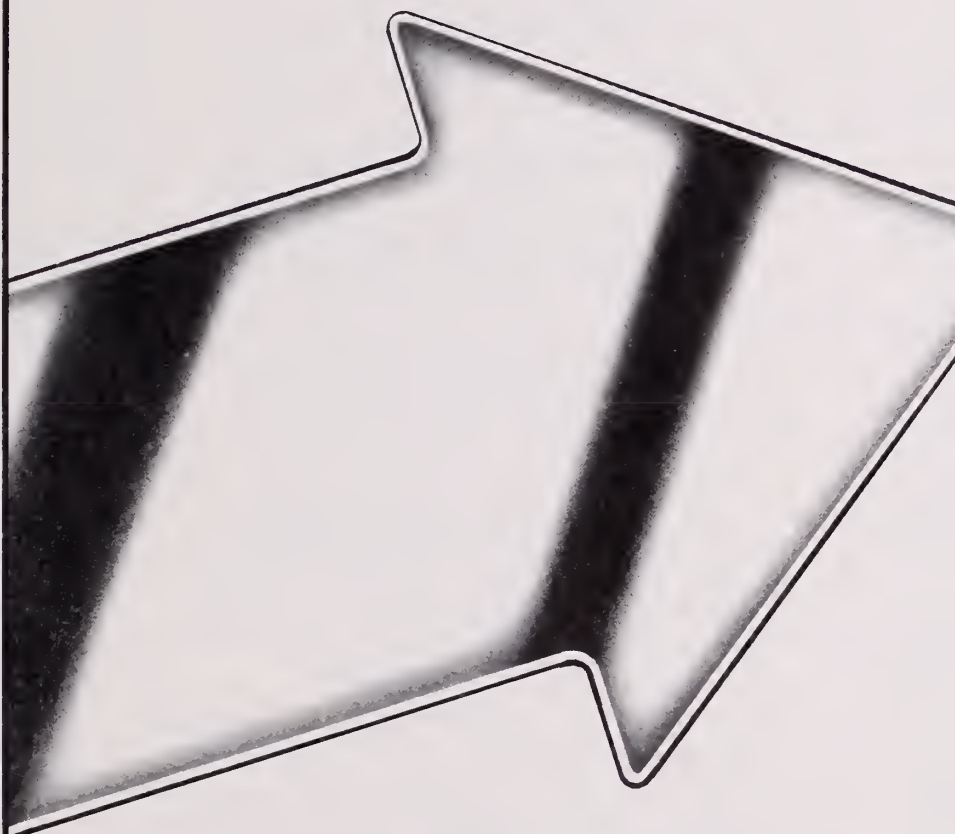
The reporting and confirmation of reactions to all vaccines is an ongoing activity of the Immunization Division of the Oklahoma State Department of Health. The division is interested in recording information about all possible adverse reactions to vaccines which would be severe enough to require the patient to seek medical attention. The division can be contacted by telephone at (405) 271-4073. □

COMMUNICABLE DISEASES IN OKLAHOMA FOR JANUARY 1983

DISEASE	January	January	January	TOTAL TO DATE	
	1983	1982	1983	1983	1982
Amebiasis	—	—	—	—	—
Aseptic Meningitis	8	4	8	8	4
Brucellosis	—	—	—	—	—
Encephalitis, Infectious	1	1	1	1	1
Gonorrhea (Use Form ODH-228)	1368	1255	1368	1368	1255
Hepatitis A	19	17	19	19	17
Hepatitis B	6	10	6	6	10
Hepatitis Unspecified	13	9	13	13	9
Malaria	—	—	—	—	—
Measles (Rubeola)	—	—	—	—	—
Meningococcal Infections	1	3	1	1	3
Pertussis	1	—	1	1	—
Rabies (Animal)	5	14	5	5	14
Rocky Mountain Spotted Fever	—	—	—	—	—
Rubella	—	—	—	—	—
Salmonellosis	15	13	15	15	13
Shigellosis	5	32	5	5	32
Syphilis (Use Form ODH-228)	22	16	22	22	16
Tetanus	—	—	—	—	—
Tuberculosis	20	26	20	20	26
Tularemia	—	—	—	—	—
Typhoid Fever	—	1	—	—	1

MEDICINE ON THE MOVE

TECHNOLOGY & TRENDS '83



OKLAHOMA STATE MEDICAL ASSOCIATION
ANNUAL MEETING / MAY 4-7, 1983 / TULSA EXCELSIOR

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OFFICIAL PROGRAM OSMA ANNUAL MEETING

May 4 - 7, 1983
Tulsa Excelsior Hotel

WEDNESDAY, MAY 4

2:00 PM	OSMA Executive Committee—Philbrook Room
4:00 PM	OSMA Board of Trustees—Remington Room

THURSDAY, MAY 5

8:00 AM to 4:00 PM	Registration — Hotel Lobby
8:00 AM to 4:00 PM	Auxiliary Hospitality—Gilcrease Room
8:00 AM	Auxiliary Nurses Loan Fund — Auxiliary President's Suite
8:30 AM	Men's Tennis Tournament—LaFortune Park
9:00 AM to 5:00 PM	Exhibits Open
9:00 AM	Auxiliary Long-Range Planning Committee—Auxiliary President's Suite
9:30 AM	Women's Tennis Tournament—Philcrest Tennis Club
10:00 AM	Opening Session, OSMA House of Delegates— Manchester/Geneva Room
10:00 AM	Auxiliary Pre-Convention Board Meeting — Auxiliary President's Suite
10:00 AM to 11:45 AM	Auxiliary Programs — Gilcrease Room "Desserts Are Still Fun in a Weight-Conscious World"; "The Flea Market Shopper"
11:45 AM	Auxiliary Joint Board Luncheon—Council Oak Room
1:00 PM	OSMA Golf Tournament—Meadowbrook Country Club
1:30 PM to 3:30 PM	Auxiliary Programs — Gilcrease Room "Treatment of the Abused Child and Sexually Abused Teenager"; "Drinking, Driving, and Teenagers"

2:00 PM	OSMA Reference Committees Committee 1 — Remington Room Committee 2 — Philbrook Room Committee 3 — Russell Room
2:00 PM	Ten-Kilometer Competitive Run and Two-Mile Fun Run — Riverside Running Track
4:00 PM	Council of the Oklahoma Society of Internal Medicine— American College of Physicians, Oklahoma Chapter— Coventry Room
6:00 PM	"Big Top" Cocktail Reception—Pre-Function Area
7:00 PM	OSMA "Night Under the Big Top" — Buckingham/Windsor Room

FRIDAY, MAY 6

7:00 AM	OSMA Past Presidents Breakfast—Coventry Room
7:30 AM	Auxiliary Past Presidents Breakfast—Westminster Room
7:30 AM to 4:30 PM	Auxiliary Hospitality—Gilcrease Room
8:00 AM to 4:00 PM	Registration — Hotel Lobby
8:30 AM	Auxiliary Credentials Check — Pre-Function Area/Manchester Room
9:00 AM	Auxiliary House of Delegates and Installation of Officers— Manchester/Geneva Room
9:00 AM to 4:30 PM	Auxiliary Western Bronze Sculpture Display
9:00 AM to 5:00 PM	Exhibits Open
9:00 AM	Scientific Program—"Medicine on the Move: Technology & Trends '83" — Council Oak Room
9:00 AM	"Modern Anesthesiology: Specialty on the Move" Lennart G. Fagraeus, MD, PhD, Professor and Chairman, Department of Anesthesiology, University of Oklahoma College of Medicine
10:15 AM	Coffee Break
10:45 AM	"In Vitro Fertilization and Embryo Transfer" J. Clark Bundren, MD, Assistant Professor, University of Oklahoma, Tulsa Medical College J. W. Edward Wortham, Jr., PhD, Assistant Professor, University of Oklahoma, Tulsa Medical College
12 NOON	Lunch Break
1:30 PM	"Nuclear Magnetic Resonance Imaging: Physical Principles, Initial Results, and Clinical Potential" C. Leon Partain, PhD, MD, Associate Professor and Director, Division of Nuclear Medicine and Biophysics, Vanderbilt University School of Medicine
2:45 PM	Coffee Break
3:15 PM	"Organ Transplantation" Larry Koep, MD, Phoenix Transplant Center; Associate Clinical Professor of Surgery, University of Arizona
4:30 PM	Adjournment

9:30 AM to 11:30 AM	Auxiliary Programs — Remington Room "An Effective Exercise Program"; Aerobics Demonstration; "Calorie Requirements, Normal and Obese Patients"
10:45 AM	OSMA Photo Contest Judging
12 NOON	OMPAC Board of Directors Luncheon Meeting—Philbrook Room
12:30 PM	Auxiliary Luncheon, "Color Me Beautiful" Seminar, and Museum Tour — Gilcrease Museum
6:00 PM	OSMA Presidential Cocktail Reception — Manchester/Buckingham Room
7:00 PM	OSMA Presidential Inaugural Banquet and Ball — Geneva/Windsor Room

SATURDAY, MAY 7

7:30 AM to 12 NOON	Registration — Hotel Lobby
8:00 AM to 1:30 PM	Auxiliary Hospitality — Gilcrease Room
8:00 AM	Impaired Physician Programs—Council Oak Room
8:00 AM	Oklahoma County Program
8:15 AM	Tulsa County Program
8:30 AM	OSMA Program
8:45 AM	Georgia Impaired Health Professionals Program G. Douglas Talbott, MD, Program Director, Medical Association of Georgia's Disabled Doctors Program
9:30 AM	Oklahoma Urological Society — Windsor Room
10:00 AM	Oklahoma Occupational Medical Association—Philbrook Room (Lunch - 12 noon, Remington Room)
10:30 AM	Auxiliary Post-Convention Board Meeting — Auxiliary President's Suite
10:40 AM	"The Promised Land," Hospital Medical Practice in the Year 2000 — Council Oak Room Spence Meighan, MD, President, Spence Meighan and Associates, Hospital Medical Staff Consultants, Portland, Oregon
12 NOON	Luncheon for Committees on Impaired Physician Programs— Coventry Room
12 NOON	Oklahoma Society of Plastic Surgeons—Buckingham Room
1:00 PM	Closing Session, OSMA House of Delegates— Manchester/Geneva Room
1:00 PM	Oklahoma Society for Therapeutic Radiologists—Russell Room "CPT-4," Carl Robert Bogardus, MD, Oklahoma City; General Membership Meeting
1:00 PM	Oklahoma Academy of Otolaryngology—Woodward Room
1:30 PM	Oklahoma State Dermatological Society—St Francis Hospital Continuing Education Center "Urticaria and Angioedema: Pathogenesis and Treatment," Nicholas A. Soter, MD, Associate Professor of Dermatology, Harvard Medical School "Skin As an Indicator of Immunological Status," Robert A. Good, PhD, MD, Head of Cancer Research Program, Oklahoma Medical Research Foundation "Accutane: Past, Present, and Future," Carl W. Ehman, MD, Director of Clinical Research, Hoffman La Roche, Inc.

	9:30 AM, Sunday, May 8 — Springer Clinic "Dermatohistopathology," Robert G. Freeman, MD, Clinical Professor of Dermatology and Pathology, University of Texas Southwestern Medical School
3:00 PM	Oklahoma State Radiological Society—Russell Room
3:00 PM	University of Oklahoma Alumni Association Executive Board — Philbrook Room
6:00 PM	University of Oklahoma Alumni Association Cocktail Reception — International Ballroom
7:00 PM	University of Oklahoma Alumni Association Banquet — International Ballroom

REGISTRATION AND TICKET FUNCTION INFORMATION

OSMA Annual Meeting

OSMA Tennis Tournaments

The Men's Tennis Tournament will be held on Thursday, May 5, at LaFortune Park, 5302 South Hudson, Tulsa. Starting time is 8:30 AM. Entry fee for the men's tournament (singles or doubles) is \$15 per person. The Women's Tennis Tournament will take place the same day at the Philcrest Tennis Club, 109th Street and Delaware, Tulsa. Starting time is 9:30 AM. Entry fee for the women's tournament (doubles only) is \$10 per person. To participate in these tournaments, you must preregister using the Registration and Ticket Orders form included in the program mailed to members in March.

OSMA Golf Tournament

The OSMA Men's Golf Tournament will take place on Thursday, May 5, at the Meadowbrook Country Club, 9300 East 81st Street, Tulsa. Tournament starting time is 1 PM. To participate in the tournament, you must preregister using the Registration and Ticket Orders form. Entry fee for the tournament is \$10 per person. Players are responsible for greens fees and cart rental. Proceeds from the tournament will be used to offset the cost of trophies and prizes.

OSMA Running Events

Two running events have been scheduled for 2 PM, Friday, May 6, at Tulsa's Riverside Running Track. The Ten-Kilometer Competitive Run and the Two-Mile Fun Run will begin at the north end of Riverside Drive. Entrants have their choice of events. Entry fee for runners is \$7.50. To participate, you must preregister using the Registration and Ticket Orders form.

OSMA "Night Under the Big Top"

On Thursday evening, May 5, the stately meeting rooms of the Excelsior Hotel will be transformed into a three-ring circus, or close to it. The entertainment spotlight that evening

will focus on OSMA's circus party, complete with ringmaster, juggler, gymnasts, mime artist, magician, clown troupe, and a special surprise act. Start the evening at the "Big Top" reception at 6 PM with cocktails, peanuts, popcorn, and circus games. Follow it with dinner at 7 PM and a dazzling circus show. Dress is casual and children are welcome. Tickets for the reception, dinner, and show are \$30 per person. Order your tickets in advance using the Registration and Ticket Orders form.

OSMA Presidential Inaugural Banquet and Ball

The highlight of this year's social events will be an elegant evening of dining, dancing, and entertainment at the OSMA Presidential Inaugural Banquet and Ball. Festivities begin at 6 PM, Friday, May 6, with a cocktail reception, followed at 7 PM by the banquet and ball. Entertainment for the gala occasion will be provided by humorist Jeanne Robertson, billed as "the tallest woman ever to lose the Miss America contest," and by the KOFM Mobile Music Machine, a spectacular audiovisual production designed for diners' listening and dancing pleasure. Tickets for the event are \$30 per person and should be purchased in advance using the Registration and Ticket Orders form.

Auxiliary Activities

The OSMA Auxiliary has scheduled a luncheon, a "Color Me Beautiful" seminar, and a museum tour on Friday, May 6, beginning at 12:30 PM at Tulsa's Gilcrease Museum. Tickets for the event are \$12 per person and may be purchased in advance using the Registration and Ticket Orders form.

The auxiliary will bring Oklahoma artist Jack Riley and his superb collection of western bronze sculpture to the Excelsior for an exhibition and sale on Friday, May 6. One of Riley's bronzes will be raffled off that evening at the Presidential Inaugural Banquet and Ball. Raffle tickets will be available from auxiliary members up to the time of the raffle. Proceeds from the raffle and a portion of the proceeds from the sculpture sale will go to the auxiliary Nurses Loan Fund. ☐

HCFA Selects Aetna to Serve As Medicare Part B Carrier

The Health Care Financing Administration (HCFA) has selected Aetna Life & Casualty to serve as Medicare Part B carrier for the entire state of Oklahoma. The selection became effective April 1.

In so doing, Aetna will assume the Medicare workload processed previously by the Oklahoma Department of Human Services (DHS). This workload consists of claims filed by approximately 40,000 persons who are entitled to both Medicare and Medicaid benefits. DHS will continue to process claims for persons eligible for Medicaid only.

HCFA is working with Aetna and DHS to assure a smooth transition and avoid a major disruption in the overall Part B program in Oklahoma. With a transition of this nature, however, it is possible that some disruption may occur.

Physicians needing information or assis-

tance during this transition period should contact Rick Ernest at OSMA headquarters, (405) 843-9571. ☐

Board of Trustees Elects Physicians As Life Members

Thirteen Oklahoma physicians were awarded OSMA Life Memberships at the OSMA Board of Trustees meeting held February 27, 1983. Elected as Life Members were: Eugene H. Arrendell, MD, Norman; William A. Betts, MD, Tulsa; Allen H. Bunch, MD, Seminole; Ernest Deese, MD, Ada; Neumon D. Johnson, MD, Tulsa; Edwin R. Maier, MD, Oklahoma City; Robert D. Mercer, MD, Oklahoma City; E. Cotter Murray, MD, Oklahoma City; Albert L. Shirkey, MD, Tulsa; Ralph A. Smith, MD, Oklahoma City; Philip G. Tullius, MD, Oklahoma City; Joe E. Tyler, MD, Oklahoma City; and Homer C. Wheeler, MD, McAlester. ☐

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OSMA Sponsorship Approved For Film on Drunk Driving

The OSMA Council on Professional and Public Relations has approved OSMA sponsorship of an anti-drunk driving film to be produced by the Oklahoma Department of Public Safety and the Oklahoma Highway Patrol.

Titled *None for the Road*, this docu-drama will depict three different but typical stories that involve driving under the influence of alcohol. The film will cover the legal, social, and economic aspects of being arrested or being involved in an accident while driving under the influence (DUI).

This will be the first film produced for the Oklahoma Highway Patrol dealing strictly with the DUI problem and the new state laws relating to this violation. It is expected to be ready for distribution this spring.

As one of ten sponsors, OSMA will receive prominent name and logo screen credit on each of the 35 prints to be produced and on all tapes distributed to television stations. The Oklahoma Department of Public Safety will show the film extensively on television stations throughout the state and before civic clubs, safety meetings, school classes, and other organizations concerned with safe driving.

According to Paul W. Reed, Jr., commissioner of public safety, Oklahoma shares the dubious distinction of recording the nation's second highest percentage increase in the number of traffic deaths during 1982. □

AMA Says Drunk Driving Laws Need Toughening Nationwide

Increased efforts to reduce the carnage caused by drunk driving on our highways are long overdue, the American Medical Association (AMA) told the National Highway Traffic Safety Administration recently.

Commenting on proposed rules to implement the new federal drunk driving law (PL 97-364), the AMA pointed out that nearly 26,000 Americans are killed every year in accidents involving drunk drivers, and physicians are fully aware of the suffering that results from these accidents.

The AMA supported adoption of federal legislation to provide funds to states that voluntarily strengthen their laws and programs against drunk driving. The AMA also has urged tougher state legislation on drunk driving and has made several related policy statements, one urging state medical associations to seek enactment and enforcement of more effective drunk driving laws and another supporting legislation to raise the legal drinking age to 21.

The new federal law provides grants to states willing to increase activities to curtail drunk driving and stipulates that the federal money is not to replace current state funding. □

Auxiliary Day at the Legislature

OSMA Auxiliary members and physician guests enjoy lunch with state legislators at the State Capitol during the auxiliary's "Health Care Legislation Day at the Capitol."

Auxiliary member Veronica Montero (left) talks with Mark R. Johnson, MD, editor-in-chief of the Journal. At right is auxiliary luncheon guest Donna Nigh, first lady of Oklahoma.



Deaths

WILLIAM S. JACOBS, MD 1916 - 1983

Tulsa internist, William S. Jacobs, MD, died February 9, 1983. A native of Knoxville, TN, Dr Jacobs was graduated from the University of Pennsylvania School of Medicine in 1942. He began his medical career in service with the US Army during World War II. Following the war, he established his practice in New Orleans where he remained until 1951 when he moved to Tulsa. He was a past-president of the Tulsa County Heart Association.

L.A.S. JOHNSTON, MD 1909 - 1983

Retired Holdenville general practitioner, L.A.S. Johnston, MD, died in Allen, Oklahoma, February 16. He was graduated from the University of Oklahoma College of Medicine in 1936. He had served as president of his county medical society and was presented a Life Membership in the Oklahoma State Medical Association.

JOHN R. LITTLE, MD 1906-1983

Retired, Oklahoma City general practitioner John R. Little, MD, died February 11, 1983. Born in Pleasant Hill, AL, Dr Little was graduated from the University of Oklahoma College of Medicine in 1929. He had practiced in Oklahoma City for many years before his retirement. In 1974, the OSMA presented Dr Little with an Honorary-Life Membership in recognition of services to the medical profession and to humanity. □

In Memoriam

1982

<i>Ella H. Murray, MD</i>	<i>May 3</i>
<i>Loyd G. Williams, MD</i>	<i>May 15</i>
<i>A. A. Walker', MD</i>	<i>July</i>
<i>Wesley Russell Mote, MD</i>	<i>July 24</i>
<i>Thomas H. Fair, MD</i>	<i>August 15</i>
<i>Clyde E. Harris, MD</i>	<i>September 1</i>
<i>Tillman A. Ragan, MD</i>	<i>September 5</i>
<i>Floyd T. Hubbard, MD</i>	<i>September 23</i>
<i>William A. Eastland, MD</i>	<i>October 3</i>
<i>William J. Craig, MD</i>	<i>October 19</i>
<i>William M. Wood, MD</i>	<i>October 30</i>
<i>Hugh C. Graham, Sr., MD</i>	<i>November 11</i>
<i>John David Wilson, MD</i>	<i>November 11</i>
<i>Clinton Gallaher, MD</i>	<i>November 15</i>
<i>Bert F. Keltz, MD</i>	<i>November 30</i>
<i>Berget H. Blocksom, MD</i>	<i>December 26</i>
<i>Harold T. Baugh, MD</i>	<i>December 28</i>

1983

<i>Dewey K. Rhea, MD</i>	<i>January 3</i>
<i>Fred C. Buffington, MD</i>	<i>January 4</i>
<i>C. D. Cunningham, MD</i>	<i>January 26</i>
<i>William S. Jacobs, MD</i>	<i>February 9</i>
<i>John R. Little, MD</i>	<i>February 11</i>
<i>L. A. S. Johnston, MD</i>	<i>February 16</i>

□

Streamlined Appeals Process Adds to CHAMPUS Efficiency

CHAMPUS has streamlined its appeals process in order to settle claims faster and to cut administrative costs and paperwork.

A new CHAMPUS regulation, effective in May 1983, eliminates extra steps in the appeals process and sets new deadlines both for filing and for receiving responses to appeals.

The new CHAMPUS rules contain simpler language and spell out clearly when and how to file appeals.

CHAMPUS-eligible patients and physicians who accept CHAMPUS may appeal the "facts in the case." For example, they may appeal the diagnosis or the need for inpatient hospital care. Individuals also may appeal the interpretation of the law, rules, or policy, but not the law or rules themselves.

When beneficiaries disagree about their CHAMPUS eligibility or nonavailability statements, they must appeal through the particular uniformed service involved.

Information on the new appeals process may be obtained from CHAMPUS, Information Office, Aurora, Colorado, 80045, (303) 361-3800. ☐

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Miscellaneous Advertisements

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101 BASIC IDEAS TO IMPROVE YOUR PRACTICE — Sensible, practical usable advice to achieve results by better rapport with patients and colleagues. Bonus supplement included featuring actual letter samples designed to graciously, tactfully and efficiently reach out and leave a good impression. Complete booklet including postage \$6.50. Irisart, 3616 Dover, Birmingham, AL 35223.

FOR SALE: Hamilton examining tables and matching cabinets; one adult, two peds with built-in scales; good condition. Assistant chairs, reception furniture. Nancy Craig, MD, PO Box 18427, Oklahoma City, OK 73154.

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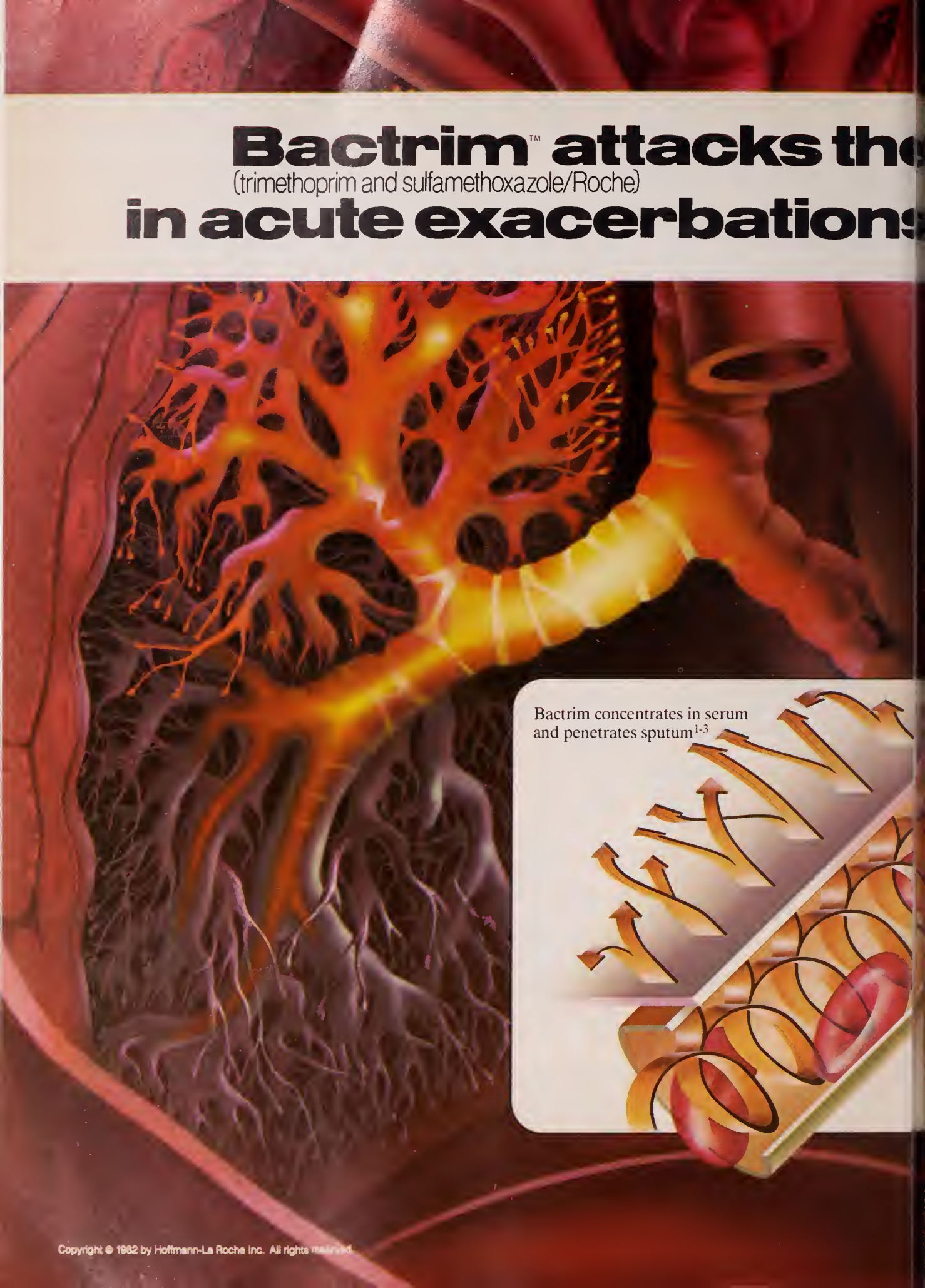
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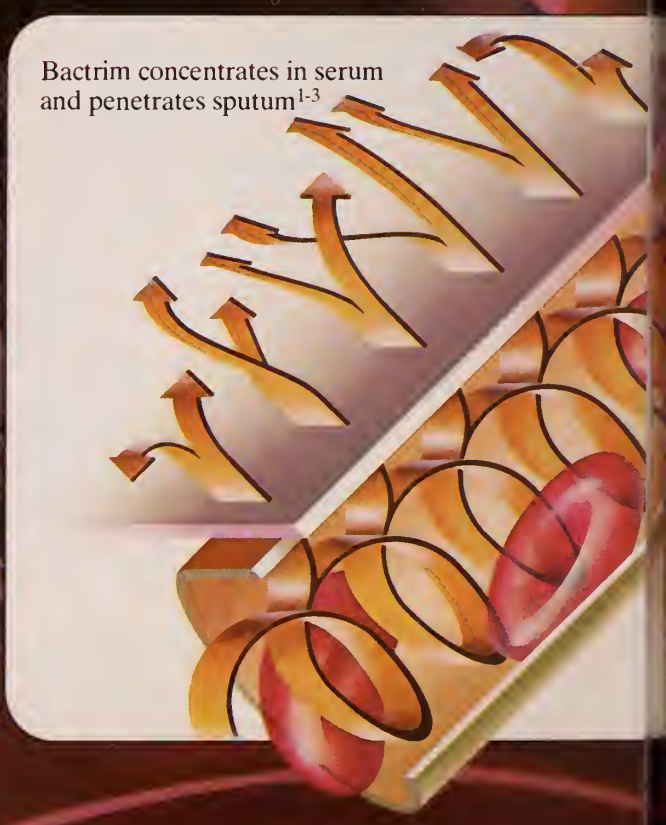
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Bactrim concentrates in serum
and penetrates sputum¹⁻³



major pathogens of chronic bronchitis*

Bactrim clears sputum of susceptible bacteria

In sputum cultures from patients with acute exacerbations of chronic bronchitis, *H. influenzae* and *S. pneumoniae* are isolated more often than any other pathogens.^{4,5} One study of transtracheal aspirates from 76 patients with acute exacerbations found that 80% of the isolates were of these two pathogens.⁵

Bactrim is effective *in vitro* against most strains of both *S. pneumoniae* and *H. influenzae*—even ampicillin-resistant strains. And in acute exacerbations of chronic bronchitis involving these two pathogens, sputum cultures taken seven days after a two-week course of therapy showed that Bactrim eradicated these bacteria in 91% (50 of 55) of the patients treated.⁶

Bactrim reduces coughing and sputum production

In three double-blind comparisons with ampicillin *q.i.d.*, Bactrim DS proved equally effective on all clinical parameters.⁷⁻⁹ Bactrim reduced the frequency and severity of coughing, reduced the amount of sputum produced and cleared the sputum of purulence.

Bactrim has the added advantages of *b.i.d.* dosage convenience and a lower incidence of diarrhea than with ampicillin, and it is useful in patients allergic to penicillins.

Bactrim also proved more effective than tetracyclines in 10 clinical trials

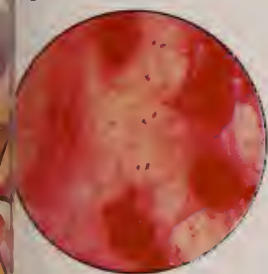
involving nearly 700 patients.¹⁰ Overall clinical condition of the patients, changes in sputum purulence, reduction in sputum volume and microbiological clearance of pathogens—all improved more with Bactrim therapy than with tetracyclines. G.I. side effects occurred in only 7% of patients treated with Bactrim compared with 12% of tetracycline-treated patients. (See Adverse Reactions in summary of product information on next page.)

Bactrim is contraindicated in pregnancy at term and nursing mothers, infants under two months of age, documented megaloblastic anemia due to folate deficiency and hypersensitivity.

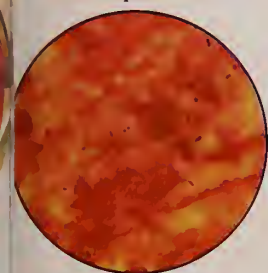
Bactrim DS. For acute exacerbations of chronic bronchitis in adults* when it offers an advantage over single-agent antibacterials.

References: 1. Hughes DTD, Bye A, Hodder P: *Adv Antimicrob Antineoplastic Chemother* 112:1105-1106, 1971. 2. Jordan GW et al: *Can Med Assoc J* 112:91S-95S, Jun 14, 1975. 3. Beck H, Pechere JC: *Prog Antimicrob Anticancer Chemother* 1:663-667, 1969. 4. Quintiliani R: Microbiological and therapeutic considerations in exacerbations of chronic bronchitis, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts*; Princeton Junction, NJ, Communications Media for Education, Inc., 1980, pp. 9-12. 5. Schreiner A et al: *Infection* 6(2):54-56, 1978. 6. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 7. Chodosh S: Treatment of acute exacerbations of chronic bronchitis: results of a double-blind crossover clinical trial, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts*. *Op. cit.*, pp. 15-16. 8. Chervinsky P: Double-blind clinical comparisons between trimethoprim-sulfamethoxazole (Bactrim™) and ampicillin in the treatment of bronchitic exacerbations. *Ibid.*, pp. 17-18. 9. Dulfano MJ: Trimethoprim-sulfamethoxazole vs. ampicillin in the treatment of exacerbations of chronic bronchitis. *Ibid.*, pp. 19-20. 10. Medici TC: Trimethoprim-sulfamethoxazole (Bactrim™) in treating acute exacerbations of chronic bronchitis: summary of European clinical experience. *Ibid.*, pp. 13-14.

attacks *H. influenzae*—even ampicillin-resistant strains



attacks *S. pneumoniae*



Economical b.i.d.

Bactrim™ DS

(160 mg trimethoprim and 800 mg sulfamethoxazole/Roche)

*Due to susceptible organisms. Please see next page for summary of product information.

BactrimTM

(trimethoprim and sulfamethoxazole/Roche)

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli*, *Klebsiella-Enterobacter*, *Proteus mirabilis*, *Proteus vulgaris*, *Proteus morganii*. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. Note: The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonia.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS.

Clinical studies show that patients with group A β -hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended, therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: General: Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. Blood dyscrasias: Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. Allergic reactions: Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. Gastrointestinal reactions: Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea, pseudomembranous colitis and pancreatitis. CNS reactions: Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. Miscellaneous reactions: Drug fever, chills, toxic nephrosis with oliguria and anuria, periarthritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients. Cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: Not recommended for infants less than two months of age.

URINARY TRACT INFECTIONS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN:

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS.

Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 14 days.

PNEUMOCYSTIS CARINII PNEUMONITIS

Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

Supplied: Double Strength (DS) tablets, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole—bottles of 100; Tel-E-Dose[®] packages of 100; Prescription Paks of 20 and 28. Tablets, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose[®] packages of 100; Prescription Paks of 40. Pediatric Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry flavored—bottles of 100 ml and 16 oz (1 pint). Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); fruit-licorice flavored—bottles of 16 oz (1 pint).

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Brief Summary of prescribing information

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INDICATIONS AND USAGE: Ru-Tuss Tablets provide relief of the symptoms resulting from irritation of sinus, nasal and upper respiratory tract tissues.

CONTRAINDICATIONS: Hypersensitivity to antihistamines or sympathomimetics. Ru-Tuss Tablets are contraindicated in children under 12 years of age and in patients with glaucoma, bronchial asthma and women who are pregnant. Concomitant use of MAO inhibitors is contraindicated.

WARNINGS: Ru-Tuss Tablets may cause drowsiness. Patients should be warned of possible additive effects caused by taking antihistamines with alcohol, hypnotics, sedatives or tranquilizers.

PRECAUTIONS: Ru-Tuss Tablets contain belladonna alkaloids, and must be administered with care to those patients with urinary bladder neck obstruction. Caution should be exercised when Ru-Tuss Tablets are given to patients with hypertension, cardiac or peripheral vascular disease or hyperthyroidism. Patients should avoid driving a motor vehicle or operating dangerous machinery (See WARNINGS:).

OVERDOSAGE: Since the action of sustained release products may continue for as long as 12 hours, treatment of overdoses directed at reversing the effects of the drug and supporting the patient should be maintained for at least that length of time. Saline cathartics are useful for hastening evacuation of unreleased medication. In children and infants, antihistamine overdosage may produce convulsions and death.

ADVERSE REACTIONS: Hypersensitivity reactions such as rash, urticaria, leukopenia agranulocytosis, and thrombocytopenia may occur. Other adverse reactions to Ru-Tuss Tablets may be drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, dizziness and insomnia. Large overdoses may cause tachypnea, delirium, fever, stupor, coma and respiratory failure.

DOSAGE AND ADMINISTRATION: Adults and children over 12 years of age, one tablet morning and evening. Not recommended for children under 12 years of age. Tablets are to be swallowed whole.

Federal law prohibits dispensing without prescription.



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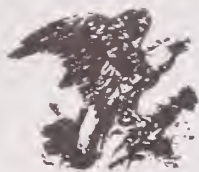
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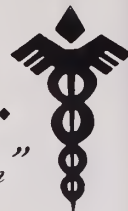
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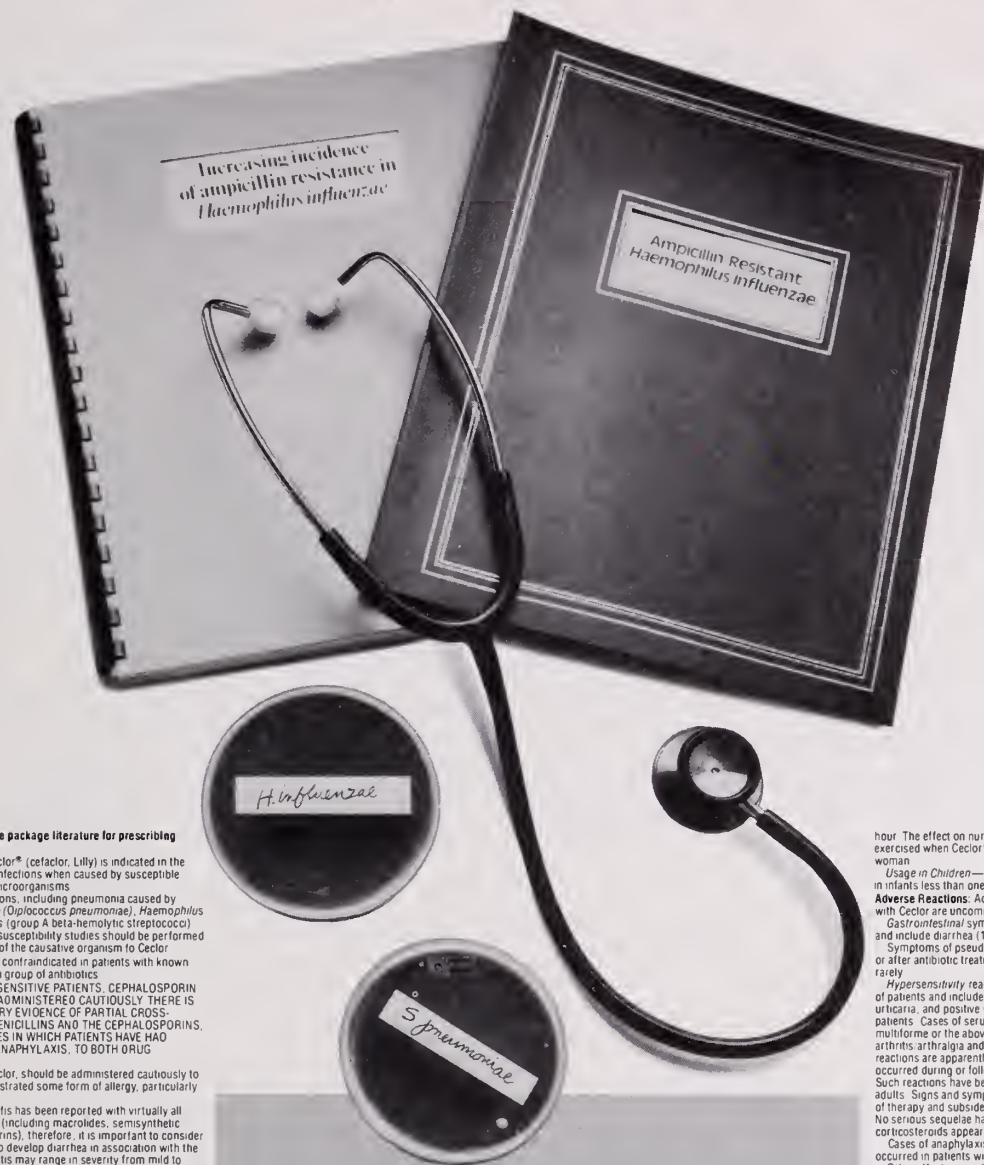
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"Dedicated to Service for the Medical Profession"

An added complication... in the treatment of bacterial bronchitis*



Brief Summary: Consult the package literature for prescribing information.

Indications and Usage: Cefclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci). Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

Contraindication: Cefclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

Precautions: General Precautions—If an allergic reaction to Cefclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Cefclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinette® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Use in Pregnancy—Pregnancy Category B—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Cefclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers—Small amounts of Cefclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one

Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Cefclor.¹⁻⁶

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefclor.⁷

Cefclor®

cefaclor

Pulvules®, 250 and 500 mg

hour. The effect on nursing infants is not known. Caution should be exercised when Cefclor® (cefaclor, Lilly) is administered to a nursing woman.

Usage in Children—Safety and effectiveness of this product for use in infants less than one month of age have not been established.

Adverse Reactions: Adverse effects considered related to therapy with Cefclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70). Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100), Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis, arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

(061782R)

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Cefclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

References

1. Antimicrob. Agents Chemother., 8: 91 1975
2. Antimicrob. Agents Chemother., 11: 470 1977
3. Antimicrob. Agents Chemother., 13: 584 1978
4. Antimicrob. Agents Chemother., 12: 490 1977
5. Current Chemotherapy (edited by W. Siegenthaler and R. Luthy), 11: 880 Washington, D.C. American Society for Microbiology 1978
6. Antimicrob. Agents Chemother., 13: 861 1978
7. Data on file, Eli Lilly and Company
8. Principles and Practice of Infectious Diseases (edited by G.L. Mandell, R.G. Douglas, Jr., and J.E. Bennett), p. 487 New York John Wiley & Sons, 1979

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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

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Roche salutes the history of Oklahoma medicine

PUTTING THE PAP TEST ON WHEELS



Introducing the new cancer detection procedure for women to rural areas was a challenge well met by the Oklahoma Division of the American Cancer Society when, in 1946, it converted an obsolete school bus into the nation's first cancer clinic on wheels.

Staffed by volunteer specialists—an internist, a dermatologist, a gynecologist and a surgeon—and one salaried secretary to handle the record-keeping, the recycled vehicle left Oklahoma City and headed north. Its first stop was Tonkawa,^{1,2} where advance publicity had drawn women from nearby towns, farms and reservations, all seeking the proffered examinations.

Cooperative effort

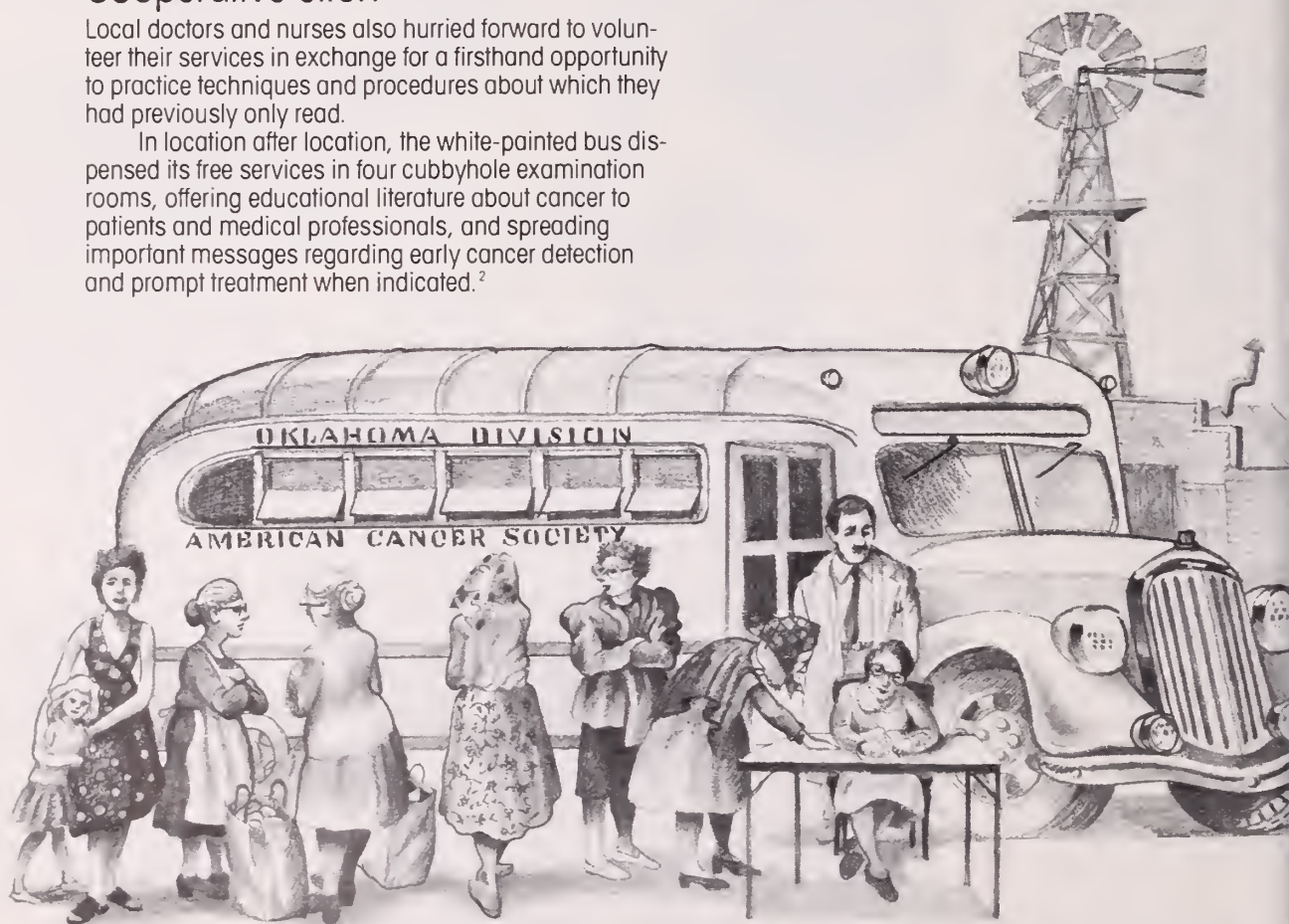
Local doctors and nurses also hurried forward to volunteer their services in exchange for a firsthand opportunity to practice techniques and procedures about which they had previously only read.

In location after location, the white-painted bus dispensed its free services in four cubbyhole examination rooms, offering educational literature about cancer to patients and medical professionals, and spreading important messages regarding early cancer detection and prompt treatment when indicated.²

The idea caught on

Today, it is not surprising to see a modern medical services vehicle on wheels in shopping-center parking areas, schoolyards or business centers. Community service organizations sponsor and support them all across the country. Unquestionably, they have come a long way in equipment and comfort from the school bus that pioneered vital health services...but *it* was the bus that made medical history.

References: 1. Kane JN: *Famous First Facts*, 3rd ed. New York, The H. W. Wilson Co., 1964, p. 367. 2. Data on file, Hoffmann-La Roche Inc., Nutley, NJ.



When the history reveals anxious depression...

For the estimated 70 percent of nonpsychotic depressed patients who are also anxious,¹ Limbitrol provides both amitriptyline, specific for symptoms of depression, and the effects of Librium® (chlordiazepoxide HCl), the tested and dependable anxiolytic. Limbitrol is, therefore, a better choice for these patients than dual agents that contain a phenothiazine, a class of antipsychotic drugs used infrequently in nonpsychotic patients.¹

62% of Overall Improvement...Within the First Week

Limbitrol also has a rapid onset of action which may lead to greater patient compliance. In a multicenter study, patients taking Limbitrol experienced 62% of their overall improvement within the first week of therapy.²

In another multicenter study,³ the following symptoms associated with anxious depression were significantly reduced during the first two weeks of therapy:

- ☐ Headache—79%
- ☐ Early insomnia—91%
- Middle insomnia—87%
- Late insomnia—89%
- ☐ Gastrointestinal upset—73%

In two multicenter studies, only 1.9% of Limbitrol patients experienced cardiovascular side effects.³

Patients should be cautioned about the combined effects with alcohol or other CNS depressants and about activities requiring complete mental alertness such as operating machinery or driving a car.

References: 1. Rickels K. Drug treatment of anxiety, in *Psychopharmacology in the Practice of Medicine*, edited by Jarvik ME; New York, Appleton-Century-Crofts, 1977, p. 316. 2. Feighner JP et al. *Psychopharmacology* 61: 217-229, Mar 1979. 3. Dato an file, Hoffmann-La Roche Inc., Nutley, NJ

In moderate depression and anxiety

Limbitrol®^{IV}

Tablets 5-12.5 each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)

Tablets 10-25 each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt)

Please see summary of product information on following page.

LIMBITROL® TABLETS[®] Tranquilizer—Antidepressant

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of moderate to severe depression associated with moderate to severe anxiety

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use, then initiate cautiously, gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction.

Warnings: Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses. Myocardial infarction and stroke reported with use of this class of drugs.) Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage, withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline, symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide).

Precautions: Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

Adverse Reactions: Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.

The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs.

Cardiovascular: Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke.

Psychiatric: Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido.

Neurologic: Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns.

Anticholinergic: Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract.

Allergic: Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus.

Hematologic: Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia.

Gastrointestinal: Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue.

Endocrine: Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels.

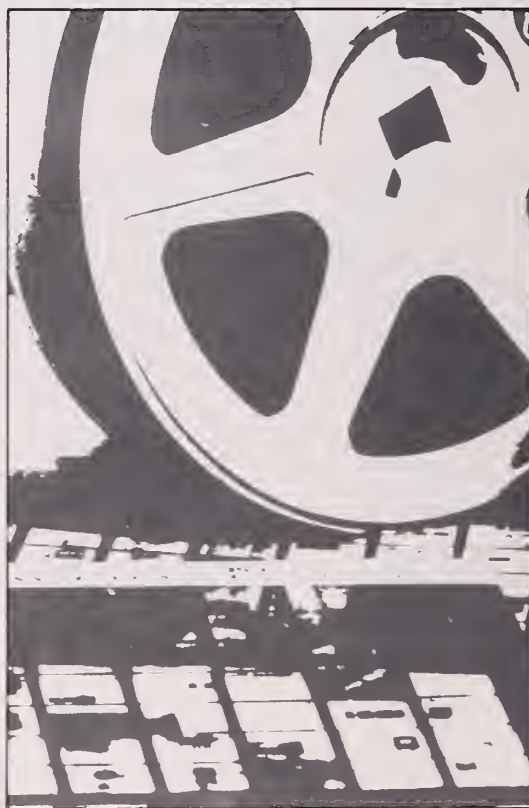
Other: Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Overdosage: Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. IV administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

Dosage: Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single *h.s.* dose may suffice for some patients. Lower dosages are recommended for the elderly. Limbitrol 10-25, initial dosage of three to four tablets daily in divided doses, increased up to six tablets or decreased to two tablets daily as required. Limbitrol 5-12.5, initial dosage of three to four tablets daily in divided doses, for patients who do not tolerate higher doses.

How Supplied: White, film-coated tablets, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) and blue, film-coated tablets, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500, Tel-E-Dose[®] packages of 100, Prescription Paks of 50.

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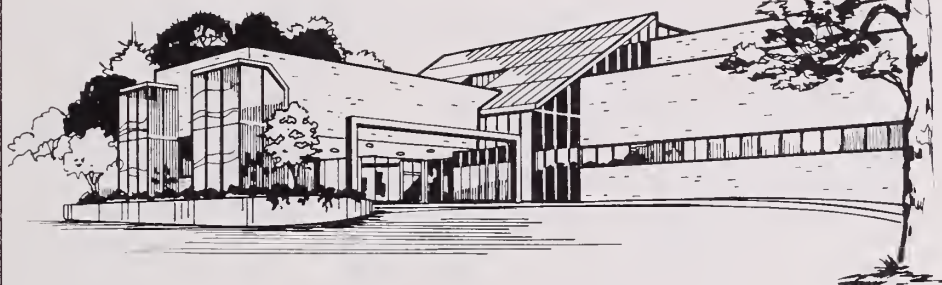
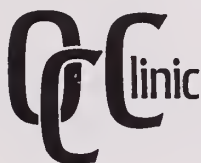
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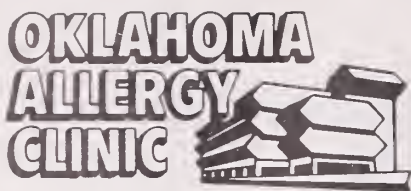
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Index to Advertisers

American-Medi Lease	xvi
American Medical International, Inc.	xxxiv
The Arthritis Clinic	xxix
Boots Pharmaceuticals, Inc.	xiv, xv, xvii, xviii
Burroughs Wellcome Co.	xiii
The Chickasha Clinic	xxix
City of Faith	i
Country View	xxv
C. L. Frates & Co., Inc.	110
Glass-Nelson Clinic	xxx
Harsha Orthopedic, Inc.	xxxvii
International Conferences	xxxiv
Eli Lilly and Company	xix
McAlester Clinic	xxx
Medical Arts Clinic of Ardmore	xxxix
Medical Arts Laboratory	xxxix
Medical Legal Seminars	viii
Oklahoma Allergy Clinic	xxxii
Oklahoma Cardiovascular & Thoracic Surgery Associates, Inc.	xxvi
Oklahoma City Clinic	xxvii
Oklahoma Hand Surgery Center, Inc.	xxxiii
Oklahoma Plastic & Reconstructive Surgeons, Inc.	xxxiv
Orthopedic & Arthritis Center	xxxiii
OSMA Group Life Insurance Trust	vi
Pension Consultants, Inc.	110
Pfizer, Inc.	iv, v
Plastic & Reconstructive Surgery Clinic, Inc.	xxxiii
PLICO	ii
Roche Laboratories	x, xi, xii, xx, xxi, xxii, back covers
Shawnee Medical Center Clinic, Inc.	xxxiii
Staff Leasing, Inc.	IFC
Tulsa Adjustment Bureau, Inc.	109
The Upjohn Company	ix
Urological and Genitourinary Surgery	xxxvii
Willow View Hospital	xxviii
Wilshire Garden Office Park	
Wyeth Laboratories	xxiii, xxiv xxxviii

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Footnotes, bibliographies, and legends for illustrations should be submitted on separate sheets, double-spaced. Bibliographies should follow in order of: name and author, title or article, name of periodical with volume number, page and date of publication. These references should be numbered in the sequence in which they appear in the article.

ILLUSTRATIONS

Illustrations, other than the author's will not be accepted for publication unless accompanied by written permission to be reproduced. Illustrations should be identified by the author's name and the figure number of the illustrations. The illustrations should be numbered in the same order as referred to in the body of the article. Used photographs, and drawings will be returned after publication if requested. *The Journal* will pay for necessary black and white illustrations within reasonable limitations. The quality of drawings, sketches, etc., must be in keeping with the quality of the magazine.

NEWS

Members of the Oklahoma State Medical Association, the constituent societies of the association, and all readers in general are invited to supply news items of general interest to the profession.

ADVERTISING

All advertising copy must be approved by the Editorial Board before acceptance for publication. General and miscellaneous advertising rates will be sent on request.

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The Editorial Board reserves the prerogative to submit contributions to a Medical Editing Service when warranted. If such is felt necessary, the Editor will contact the author for approval, informing him that there will be a modest charge for this service.

REPRINTS

Authors will receive reprint order forms from the Transcript Press, P.O. Drawer 1058, Norman, Oklahoma 73070, prior to final publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

BACK ISSUES

Microfilm copies of back issues of *The Journal* may now be purchased from University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

OKLAHOMA STATE MEDICAL ASSOCIATION

OSMAA 1983 ANNUAL MEETING

May 5 - 7, 1983

Tulsa, Oklahoma

Excelsior Hotel

SCHEDULE OF EVENTS

Thursday, May 5

8:00 AM to 4:00 PM	Auxiliary Hospitality — Gilcrease Room
8:00 AM to 4:00 PM	Auxiliary Registration — Hotel Lobby
8:00 AM	Nurses Loan Fund — President's Suite
9:00 AM	Long-Range Planning — President's Suite
10:00 AM	Pre-Convention Board Meeting—President's Suite
11:45 AM	Joint Board Luncheon—Special Guest, Betty Payne Council Oak Room
1:30 PM	"Treatment of the Abused Child and Sexually Abused Teenager", Cheryl Kelly and Mary-Lincoln Beilke
2:15 PM	"Drinking, Driving and Teenagers", Judy Wenger and Hazel Vammen—Both programs, Gilcrease Room

Friday, May 6

7:30 AM to 4:30 PM	Auxiliary Hospitality — Gilcrease Room
7:30 AM	Auxiliary Past Presidents' Breakfast—Westminster Room
8:00 AM to 4:00 PM	Auxiliary Registration — Hotel Lobby
8:30 AM to 9:00 AM	Auxiliary Credentials Check—Pre-Function Area
9:00 AM to 4:30 PM	Jack Riley, Bronze Exhibit , check with Gilcrease Room
9:00 AM to 12:00 Noon	Auxiliary House of Delegates & Installation of Officers, AMA Auxiliary President Betty Payne, Special Guest, Manchester/Geneva Room
12:30 PM to 2:30 PM	Auxiliary Luncheon—"Color Me Beautiful" Seminar Barbara Hess & Ginger Wieding—Gilcrease Museum
2:30 PM	Tour — Gilcrease Museum

Saturday, May 7

8:00 AM to 1:30 PM	Auxiliary Hospitality — Gilcrease Room
8:45 AM to 10:00 AM	Impaired Physician Program , G. Douglas Talbott, MD, Director Impaired Physicians Rehabilitation Program Council Oak Room
10:30 AM	Auxiliary Post-Convention Board Meeting President's Suite

OTHER ACTIVITIES

Thursday, May 5

9:30 AM	Women's Tennis Tournament—Philcrest Tennis Club
10:00 AM	"Desserts Are Still Fun in a Weight Conscious World" Judy Miller
11:00 AM	"The Flea Market Shopper", Mary Ann Harmon & Margaret Ketchum—Both programs, Gilcrease Room

Friday, May 6

9:30 AM	"An Effective Exercise Program", Kim Elliott, Director, Hillcrest Exercise & Lifestyle Program (HELP)
10:00 AM	Aerobics Demonstration, Nancy Paul
10:30 AM	"Calorie Requirements of Normal & Obese Patients," Steven Newmark, MD — Remington Room

Saturday, May 7

10:00 AM	Tours: Shopping—Tulsa Flea Market, ORU City of Faith
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Please pre-register early so we can make our plans. You **must** pre-register for Pre-Convention Luncheon and "Color Me Beautiful" Seminar, because of a limited number of seats.

San Bernadino County, California, has published a 500-page, two-volume report designed to provide employers with a valid and reliable method of determining and assessing the physical demands and working conditions of physically demanding jobs. Titled *The Medical Standards Project*, the report includes a complete set of medical standards for use by physicians who conduct preemployment or in-service examinations. Copies are available at \$35 each from San Bernadino County, Personnel Division, 157 West Fifth Street, San Bernadino, California 92415.

April is Cancer Control Month, and American Cancer Society volunteers will be distributing important life-saving information about cancer safeguards and warning signals throughout Oklahoma County. The week of April 18 is the week of the American Cancer Society Residential Crusade. Donations from the crusade will be used for research, service and rehabilitation, and public and professional education programs.

The number of US physicians is increasing faster than the population at large. Between 1976 and 1981, the number of physicians increased 18.5%, while the US population increased 5.4%. As a result, the population-to-physician ratio has decreased 11.0% since 1976 and 2.6% from 1980 to 1981, according to figures from the AMA Physician Masterfile. At the end of 1981, there were 485,123 medical doctors, 230.5 million people, and an average of 210.4 physicians for every 100,000 population. Of the 485,123 physicians, 80.2% were engaged in direct patient care activities. Forty-four percent of all practicing physicians were in primary care. Women and foreign medical graduates made up 12.2% and 21.2% of the physician population, respectively.

Thirty-one states will have additional AMA delegates this year. Based on 1982 membership figures for physicians, residents, and students, the total count increased by 45 delegates over last year. One additional delegate seat will be allocated to the state of Oklahoma; this seat will be filled by a delegate selected by the OSMA House of Delegates during the 1983 annual meeting in May.

The American Society of Internal Medicine (ASIM) has published an updated brochure reflecting changes in Medicare law for 1983. The brochure titled *Medicare: What It Will and Will Not Pay For*, has been called by the Health Care Financing Administration one of the clearest explanations of the federal health insurance program for the aged.

The brochure explains what Medicare is, who is eligible, and how to claim benefits; specifies benefits and exclusions under both Medicare Part A (hospital) and Medicare Part B (medical) insurance; and explains a physician's "reasonable charge" and the right of appeal. To order, send a check or money order for \$20 per 100 copies, \$90 per 500 copies, or \$180 per 1,000 copies to ASIM Literature Orders, Dept. 83, 1101 Vermont Avenue, NW, Suite 500, Washington, DC 20005.

The Milton H. Erickson Foundation is sponsoring the Second International Congress on Ericksonian Approaches to Hypnosis and Psychotherapy on November 30-December 4, 1983, in Phoenix, Arizona. This clinically oriented meeting features half-day workshop, demonstration, presentations, papers, panels, and discussions of videotapes of Milton H. Erickson, MD. The program is approved for AMA Category One CME credit. For information contact Jeffrey K. Zeig, PhD., Milton H. Erickson Foundation, 3606 North 24th Street, Phoenix, Arizona 85020, (602) 956-6196. □

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References: 1. Kales A et al: *J Clin Pharmacol* 17:207-213, Apr 1977 and data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Kales A: Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 3. Zimmerman AM: *Curr Ther Res* 13:18-22, Jan 1971. 4. Kales A et al: *JAMA* 241:1692-1695, Apr 20, 1979. 5. Kales A, Scharf MB, Kales JD: *Science* 201:1039-1041, Sep 15, 1978. 6. Kales A et al: *Clin Pharmacol Ther* 19:576-583, May 1976. 7. Kales A, Kales JD: *Pharmacol Physicians* 4:1-6, Sep 1970. 8. Frost JD Jr, DeLucchi MR: *J Am Geriatr Soc* 27:541-546, Dec 1979. 9. Dement WC et al: *Behav Med* 5:25-31, Oct 1978. 10. Vogel GW: Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 11. Karacan I, Williams RL, Smith JR: The

sleep laboratory in the investigation of sleep and sleep disturbances. Scientific exhibit at the 124th annual meeting of the American Psychiatric Association, Washington, DC, May 3-7, 1971. 12. Pollak CP, McGregor PA, Weitzman ED: The effects of flurazepam on daytime sleep after acute sleep-wake cycle reversal. Presented at the 15th annual meeting of the Association for Psychophysiological Study of Sleep, Edinburgh, Scotland, June 30-July 4, 1975. 13. Data on file, Hoffmann-La Roche Inc., Nutley, NJ.

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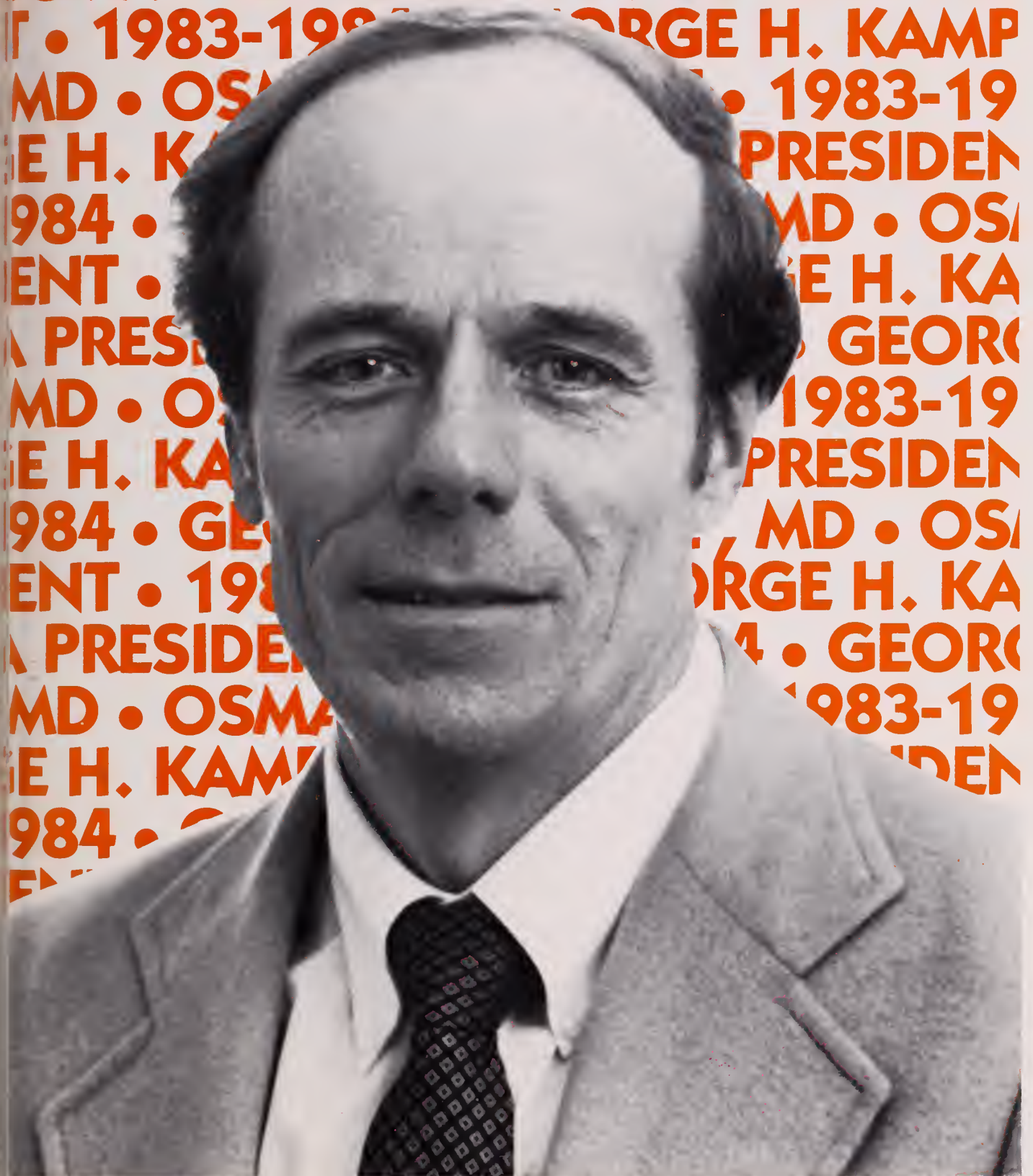
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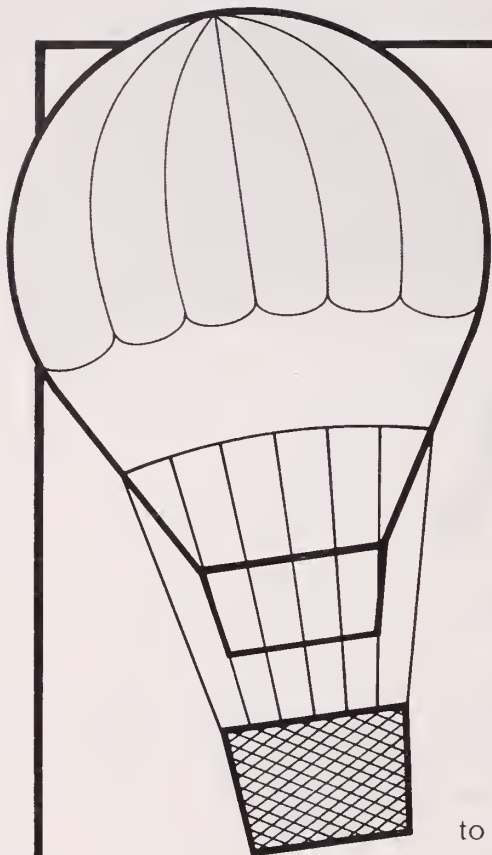
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Oklahoma State Medical Association

MAY, 1983

Vol. 76, No. 5

CONTENTS

- 113 Mandatory C.M.E. — In Economics
- 114 President's Page
- 115 A Performance Evaluation of the Microbiology and Immunology Course for Second-Year Medical Students, *D. J. Flournoy, PhD*, and *Richard M. Hyde, PhD*
- 119 Report of the American Medical Association Council on Scientific Affairs
- 123 Consequences of Infections By Epstein-Barr Virus, *Harris D. Riley, Jr., MD*
- 127 News From The Oklahoma State Department of Health
- 128 Dr George Kamp of Tulsa Is New President of OSMA
- 128 AMA's Education Foundation Adds to Student Assistance
- 128 Leadership Manual Provides Orientation for Foreign Grads
- 129 Oklahoma Hospital Offers 24-Hour Delivery Service
- 131 Publications Judges Award Honorable Mention to Journal
- 131 Patient Instruction Sheets Cover 20 Additional Drugs
- 133 Healthy People Need Medical Exams at Regular Intervals
- 133 President's Council Urges Support of Fitness Goals
- 133 CPI Medical Care Sector Continues to Rise Rapidly
- 134 Deaths
- 134 In Memoriam
- 135 Reaction Time
- 136 Miscellaneous Advertisements
- xliii Auxiliary
- xliv The Last Word

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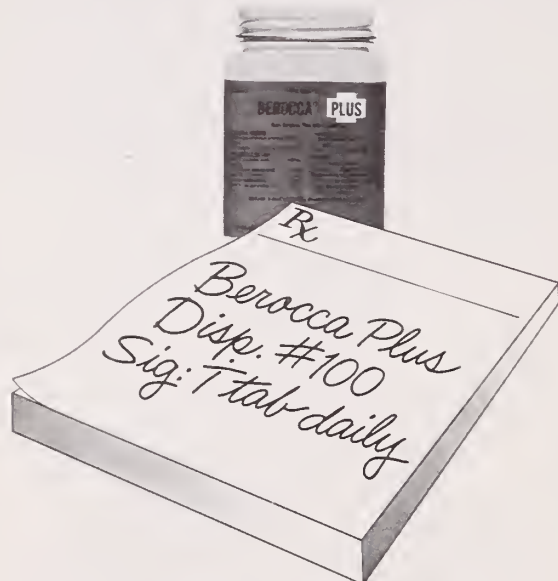


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THE MULTIVITAMIN/MINERAL FORMULATION



Before prescribing, please consult complete product information, a summary of which follows:

Each Berocca* Plus tablet contains 5000 IU vitamin A (as vitamin A acetate), 30 IU vitamin E (as *di*-alpha tocopheryl acetate), 500 mg vitamin C (ascorbic acid), 20 mg vitamin B₁ (as thiamine mononitrate), 20 mg vitamin B₂ (riboflavin), 100 mg niacin (as niacinamide), 25 mg vitamin B₆ (as pyridoxine HCl), 0.15 mg biotin, 25 mg pantothenic acid (as calcium pantothenate), 0.8 mg folic acid, 50 mcg vitamin B₁₂ (cyanocobalamin), 27 mg iron (as ferrous fumarate), 0.1 mg chromium (as chromium nitrate), 50 mg magnesium (as magnesium oxide), 5 mg manganese (as manganese dioxide), 3 mg copper (as cupric oxide), 22.5 mg zinc (as zinc oxide).

INDICATIONS: Prophylactic or therapeutic nutritional supplementation in physiologically stressful conditions including conditions causing depletion, or reduced absorption or bioavailability of essential vitamins and minerals; certain conditions resulting from severe B-vitamin or ascorbic acid deficiency, or conditions resulting in increased needs for essential vitamins and minerals.

CONTRAINDICATIONS: Hypersensitivity to any component.

WARNINGS: Not for pernicious anemia or other megaloblastic anemias where vitamin B₁₂ is deficient. Neurologic involvement may develop or progress, despite temporary remission of anemia, in patients with vitamin B₁₂ deficiency who receive supplemental folic acid and who are inadequately treated with B₁₂.

PRECAUTIONS: *General:* Certain conditions may require additional nutritional supplementation. During pregnancy, supplementation with vitamin D and calcium may be required. Not intended for treatment of severe specific deficiencies. *Information for the Patient:* Toxic reactions have been reported with injudicious use of certain vitamins and minerals. Urge patients to follow specific dosage instructions. Keep out of reach of children. *Drug and Treatment Interactions:* As little as 5 mg pyridoxine daily can decrease the efficacy of levodopa in the treatment of parkinsonism. Not recommended for patients undergoing such therapy.

ADVERSE REACTIONS: Adverse reactions have been reported with specific vitamins and minerals, but generally at levels substantially higher than those in Berocca Plus. However allergic and idiosyncratic reactions are possible at lower levels. Iron, even at the usual recommended levels, has been associated with gastrointestinal intolerance in some patients.

DOSAGE AND ADMINISTRATION: Usual adult dosage: one tablet daily. Not recommended for children. Available on prescription only.

HOW SUPPLIED: Golden yellow, capsule-shaped tablets — bottles of 100.



ROCHE LABORATORIES
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

References

1. Stone PH, Turz ZG, Muller JE. Efficacy of nifedipine therapy for refractory angina pectoris. *Am Heart J* 104:672-681, September 1982.
2. Antman E, Muller J, Goldberg S, et al. Nifedipine therapy for coronary artery spasm. Experience in 127 patients. *N Engl J Med* 302:1269-1273, June 5, 1980.

BRIEF SUMMARY

PROCARDIA* (nifedipine) CAPSULES

For Oral Use

INDICATIONS AND USAGE: I. Vasospastic Angina: PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria: 1) classical pattern of angina at rest accompanied by ST segment elevation; 2) angina or coronary artery spasm provoked by ergonovine; or 3) angiographically demonstrated coronary artery spasm. In those patients who have had angiography, the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina, provided that the above criteria are satisfied. PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed, e.g., where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm or when angina is refractory to nitrates and/or adequate doses of beta blockers.

II. Chronic Stable Angina (Classical Effort-Associated Angina): PROCARDIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or organic nitrates or who cannot tolerate those agents.

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete.

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina, but available information is not sufficient to predict with confidence the effects of concurrent treatment, especially in patients with compromised left ventricular function or cardiac conduction abnormalities. When introducing such concomitant therapy, care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs. (See Warnings.)

CONTRAINDICATIONS: Known hypersensitivity reaction to PROCARDIA.

WARNINGS: Excessive Hypotension: Although in most patients the hypotensive effect of PROCARDIA is modest and well tolerated, occasional patients have had excessive and poorly tolerated hypotension. These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment, and may be more likely in patients on concomitant beta blockers.

Severe hypotension and/or increased fluid volume requirements have been reported in patients receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia. The interaction with high dose fentanyl appears to be due to the combination of PROCARDIA and a beta blocker, but the possibility that it may occur with PROCARDIA alone, with low doses of fentanyl, in other surgical procedures, or with other narcotic analgesics cannot be ruled out. In PROCARDIA treated patients where surgery using high dose fentanyl anesthesia is contemplated, the physician should be aware of these potential problems and if the patient's condition permits, sufficient time (at least 36 hours) should be allowed for PROCARDIA to be washed out of the body prior to surgery.

Increased Angina: Occasional patients have developed well documented increased frequency, duration or severity of angina on starting PROCARDIA or at the time of dosage increases. The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate, or from increased demand resulting from increased heart rate alone.

Beta Blocker Withdrawal: Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina, probably related to increased sensitivity to catecholamines. Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release. There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation. It is important to taper beta blockers if possible, rather than stopping them abruptly before beginning PROCARDIA.

Congestive Heart Failure: Rarely, patients usually receiving a beta blocker, have developed heart failure after beginning PROCARDIA. Patients with light aortic stenosis may be at greater risk for such an event.

PRECAUTIONS: General: Hypotension. Because PROCARDIA decreases peripheral vascular resistance, careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested. Close observation is especially recommended for patients already taking medications that are known to lower blood pressure. (See Warnings.)

Peripheral edema: Mild to moderate peripheral edema, typically associated with arterial vasodilation and not due to left ventricular dysfunction, occurs in about one in ten patients treated with PROCARDIA. This edema occurs primarily in the lower extremities and usually responds to diuretic therapy. With patients whose angina is complicated by congestive heart failure, care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction.

Drug interactions: Beta-adrenergic blocking agents. (See Indications and Warnings.) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated, but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure, severe hypotension or exacerbation of angina.

Long-acting nitrates. PROCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antiangebral effectiveness of this combination.

Digitalis. Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers. The average increase was 45%. Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease. In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured, digitalis toxicity was not observed. Since there have been isolated reports of patients with elevated digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing PROCARDIA to avoid possible over- or under-digitalization.

Carcinogenesis, mutagenesis, impairment of fertility. When given to rats prior to mating, nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose.

Pregnancy. Category C. Please see full prescribing information with reference to teratogenicity in rats, embryotoxicity in rats, mice and rabbits, and abnormalities in monkeys.

ADVERSE REACTIONS: The most common adverse events include dizziness or light-headedness, peripheral edema, nausea, weakness, headache and flushing each occurring in about 10% of patients; transient hypotension in about 5%, palpitation in about 2% and syncope in about 0.5%. Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antiangebral medication. Additionally the following have been reported: muscle cramps, nervousness, dyspnea, nasal and chest congestion, diarrhea, constipation, inflammation, joint stiffness, shakiness, sleep disturbances, blurred vision, difficulties in balance, dermatitis, pruritus, urticaria, fever, sweating, chills, and sexual difficulties. Very rarely, introduction of PROCARDIA therapy was associated with an increase in anginal pain, possibly due to associated hypotension.

In addition, more serious adverse events were observed, not readily distinguishable from the natural history of the disease in these patients. It remains possible, however, that some or many of these events were drug related. Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2%. Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0.5% of patients.

Laboratory Tests: Rare, mild to moderate, transient elevations of enzymes such as alkaline phosphatase, CPK, LDH, SGPT have been noted, and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy. The relationship to PROCARDIA therapy is uncertain. These laboratory abnormalities have rarely been associated with clinical symptoms. Cholestasis, possibly due to PROCARDIA therapy, has been reported twice in the extensive world literature.

HOW SUPPLIED: Each orange, soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedipine. PROCARDIA CAPSULES are supplied in bottles of 100 (NOC 0069-2600-66), 300 (NOC 0069-2600-72) and unit dose (10x10) (NOC 0069-2600-41). The capsules should be protected from light and moisture and stored at controlled room temperature 59° to 77° F (15° to 25° C) in the manufacturer's original container.

More detailed professional information available on request.

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LABORATORIES DIVISION
PFIZER INC.

Brief Summary of prescribing information

RU-TUSS® TABLETS

INDICATIONS AND USAGE: Ru-Tuss Tablets provide relief of the symptoms resulting from irritation of sinus, nasal and upper respiratory tract tissues.

CONTRAINDICATIONS: Hypersensitivity to antihistamines or sympathomimetics. Ru-Tuss Tablets are contraindicated in children under 12 years of age and in patients with glaucoma, bronchial asthma and women who are pregnant. Concomitant use of MAO inhibitors is contraindicated.

WARNINGS: Ru-Tuss Tablets may cause drowsiness. Patients should be warned of possible additive effects caused by taking antihistamines with alcohol, hypnotics, sedatives or tranquilizers.

PRECAUTIONS: Ru-Tuss Tablets contain belladonna alkaloids, and must be administered with care to those patients with urinary bladder neck obstruction. Caution should be exercised when Ru-Tuss Tablets are given to patients with hypertension, cardiac or peripheral vascular disease or hyperthyroidism. Patients should avoid driving a motor vehicle or operating dangerous machinery (See WARNINGS:).

OVERDOSAGE: Since the action of sustained release products may continue for as long as 12 hours, treatment of overdoses directed at reversing the effects of the drug and supporting the patient should be maintained for at least that length of time. Saline cathartics are useful for hastening evacuation of unreleased medication. In children and infants, antihistamine overdosage may produce convulsions and death.

ADVERSE REACTIONS: Hypersensitivity reactions such as rash, urticaria, leukopenia agranulocytosis, and thrombocytopenia may occur. Other adverse reactions to Ru-Tuss Tablets may be drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, tachycardia, hypotension/hypertension, faintness, dizziness, tinnitus, headache, incoordination, visual disturbances, mydriasis, xerostomia, blurred vision, anorexia, nausea, vomiting, diarrhea, constipation, epigastric distress, hyperirritability, nervousness, dizziness and insomnia. Large overdoses may cause tachypnea, delirium, fever, stupor, coma and respiratory failure.

DOSAGE AND ADMINISTRATION: Adults and children over 12 years of age, one tablet morning and evening. Not recommended for children under 12 years of age. Tablets are to be swallowed whole.

Federal law prohibits dispensing without prescription.



Boots Pharmaceuticals, Inc.
Shreveport LA 71106
Pioneers in medicine for the family

Candidates for nutritional therapy...

25,500,000 geriatric patients.

The older patient may have some disorder or socioeconomic problem that can undermine good nutrition.*



Berocca Plus. A balanced formula for prophylactic or therapeutic nutritional supplementation. Berocca Plus Tablets provide: therapeutic levels of ascorbic acid and B-complex vitamins; supplemental levels of biotin, vitamins A and E, and five important minerals (iron, chromium, manganese, copper and zinc); plus magnesium. Berocca Plus is not intended for the treatment of specific vitamin and/or mineral deficiencies.

...candidates for

Rx ONLY

Berocca® Plus TABLETS

THE MULTIVITAMIN/MINERAL FORMULATION

*Watkin DM: Nutrition for the aging and the aged, chap. 28, in *Modern Nutrition in Health and Disease*, edited by Goodhart RS. Shils ME: Philadelphia, Lea & Febiger, 1980, p. 781.

Please see summary of product information on reverse page.

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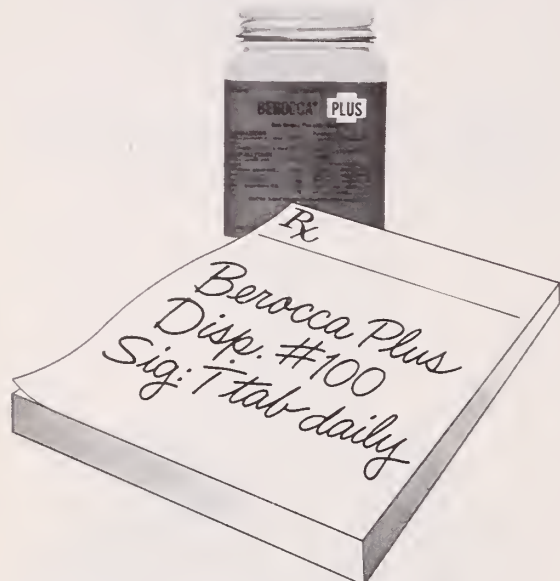


Optimize nutritional support with

Rx ONLY

Berocca Plus TABLETS

THE MULTIVITAMIN/MINERAL FORMULATION



Before prescribing, please consult complete product information, a summary of which follows:

Each Berocca* Plus tablet contains 5000 IU vitamin A (as vitamin A acetate), 30 IU vitamin E (as *d*-alpha tocopheryl acetate), 500 mg vitamin C (ascorbic acid), 20 mg vitamin B₁ (as thiamine mononitrate), 20 mg vitamin B₂ (riboflavin), 100 mg niacin (as niacinamide), 25 mg vitamin B₆ (as pyridoxine HCl), 0.15 mg biotin, 25 mg pantothenic acid (as calcium pantothenate), 0.8 mg folic acid, 50 mcg vitamin B₁₂ (cyanocobalamin), 27 mg iron (as ferrous fumarate), 0.1 mg chromium (as chromium nitrate), 50 mg magnesium (as magnesium oxide), 5 mg manganese (as manganese dioxide), 3 mg copper (as cupric oxide), 22.5 mg zinc (as zinc oxide).

INDICATIONS: Prophylactic or therapeutic nutritional supplementation in physiologically stressful conditions, including conditions causing depletion, or reduced absorption or bioavailability of essential vitamins and minerals, certain conditions resulting from severe B-vitamin or ascorbic acid deficiency, or conditions resulting in increased needs for essential vitamins and minerals.

CONTRAINDICATIONS: Hypersensitivity to any component.

WARNINGS: Not for pernicious anemia or other megaloblastic anemias where vitamin B₁₂ is deficient. Neurologic involvement may develop or progress, despite temporary remission of anemia, in patients with vitamin B₁₂ deficiency who receive supplemental folic acid and who are inadequately treated with B₁₂.

PRECAUTIONS: *General:* Certain conditions may require additional nutritional supplementation. During pregnancy, supplementation with vitamin D and calcium may be required. Not intended for treatment of severe specific deficiencies. *Information for the Patient:* Toxic reactions have been reported with injudicious use of certain vitamins and minerals. Urge patients to follow specific dosage instructions. Keep out of reach of children. *Drug and Treatment Interactions:* As little as 5 mg pyridoxine daily can decrease the efficacy of levodopa in the treatment of parkinsonism. Not recommended for patients undergoing such therapy.

ADVERSE REACTIONS: Adverse reactions have been reported with specific vitamins and minerals, but generally at levels substantially higher than those in Berocca Plus. However, allergic and idiosyncratic reactions are possible at lower levels. Iron, even at the usual recommended levels, has been associated with gastrointestinal intolerance in some patients.

DOSAGE AND ADMINISTRATION: Usual adult dosage: one tablet daily. Not recommended for children. Available on prescription only.

HOW SUPPLIED: Golden yellow, capsule-shaped tablets — bottles of 100.



ROCHE LABORATORIES
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

References

1. Stone PH, Turin ZG, Muller JE. Efficacy of nifedipine therapy for refractory angina pectoris. *Am Heart J* 104:672-681, September 1982.
2. Antman E, Muller J, Goldberg S, et al. Nifedipine therapy for coronary-artery spasm: Experience in 127 patients. *N Engl J Med* 302:1269-1273, June 5, 1980.

BRIEF SUMMARY

PROCARDIA® (nifedipine) CAPSULES

For Oral Use

INDICATIONS AND USAGE: **I. Vasospastic Angina:** PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria: 1) classical pattern of angina at rest accompanied by ST segment elevation; 2) angina or coronary artery spasm provoked by ergonovine; or 3) angiographically demonstrated coronary artery spasm. In those patients who have had angiography, the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina, provided that the above criteria are satisfied. PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed, e.g., where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm or when angina is refractory to nitrates and/or adequate doses of beta blockers.

II. Chronic Stable Angina (Classical Effort-Associated Angina): PROCARDIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or organic nitrates or who cannot tolerate those agents.

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete.

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina, but available information is not sufficient to predict with confidence the effects of concurrent treatment, especially in patients with compromised left ventricular function or cardiac conduction abnormalities. When introducing such concomitant therapy, care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs. (See Warnings.)

CONTRAINDICATIONS: Known hypersensitivity reaction to PROCARDIA.

WARNINGS: **Excessive Hypotension:** Although in most patients the hypotensive effect of PROCARDIA is modest and well tolerated, occasional patients have had excessive and poorly tolerated hypotension. These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment and may be more likely in patients on concomitant beta blockers.

Severe hypotension and/or increased fluid volume requirements have been reported in patients receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia. The interaction with high dose fentanyl appears to be due to the combination of PROCARDIA and a beta blocker, but the possibility that it may occur with PROCARDIA alone, with low doses of fentanyl, in other surgical procedures, or with other narcotic analgesics cannot be ruled out. In PROCARDIA treated patients where surgery using high dose fentanyl anesthesia is contemplated, the physician should be aware of these potential problems and, if the patient's condition permits, sufficient time (at least 36 hours) should be allowed for PROCARDIA to be washed out of the body prior to surgery.

Increased Angina: Occasional patients have developed well documented increased frequency, duration or severity of angina on starting PROCARDIA or at the time of dosage increases. The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate, or from increased demand resulting from increased heart rate alone.

Beta Blocker Withdrawal: Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina, probably related to increased sensitivity to catecholamines. Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release. There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation. It is important to taper beta blockers if possible, rather than stopping them abruptly before beginning PROCARDIA.

Congestive Heart Failure: Rarely, patients usually receiving a beta blocker, have developed heart failure after beginning PROCARDIA. Patients with tight aortic stenosis may be at greater risk for such an event.

PRECAUTIONS: **General:** **Hypotension:** Because PROCARDIA decreases peripheral vascular resistance, careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested. Close observation is especially recommended for patients already taking medications that are known to lower blood pressure. (See Warnings.)

Peripheral edema: Mild to moderate peripheral edema, typically associated with arterial vasodilation and not due to left ventricular dysfunction, occurs in about one in ten patients treated with PROCARDIA. This edema occurs primarily in the lower extremities and usually responds to diuretic therapy. With patients whose angina is complicated by congestive heart failure, care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction.

Drug interactions: Beta-adrenergic blocking agents. (See Indications and Warnings.) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated, but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure, severe hypotension or exacerbation of angina.

Long-acting nitrates. PROCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination.

Digitalis: Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers. The average increase was 45%. Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease. In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured, digitalis toxicity was not observed. Since there have been isolated reports of patients with elevated digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing PROCARDIA to avoid possible over- or under-digitalization.

Carcinogenesis, mutagenesis, impairment of fertility: When given to rats prior to mating, nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose.

Pregnancy: Category C. Please see full prescribing information with reference to teratogenicity in rats, embryotoxicity in rats, mice and rabbits, and abnormalities in monkeys.

ADVERSE REACTIONS: The most common adverse events include dizziness or light-headedness, peripheral edema, nausea, weakness, headache and flushing each occurring in about 10% of patients; transient hypotension in about 5%; palpitation in about 2%; and syncope in about 0.5%. Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antianginal medication. Additionally the following have been reported: muscle cramps, nervousness, dyspnea, nasal and chest congestion, diarrhea, constipation, inflammation, joint stiffness, shakiness, sleep disturbances, blurred vision, difficulties in balance, dermatitis, pruritus, urticaria, fever, sweating, chills and sexual difficulties. Very rarely, introduction of PROCARDIA therapy was associated with an increase in anginal pain, possibly due to associated hypotension.

In addition, more serious adverse events were observed, not readily distinguishable from the natural history of the disease in these patients. It remains possible, however, that some or many of these events were drug related. Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2%. Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0.5% of patients.

Laboratory Tests: Rare, mild to moderate, transient elevations of enzymes such as alkaline phosphatase, CPK, LDH, SGOT, and SGPT have been noted, and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy. The relationship to PROCARDIA therapy is uncertain. These laboratory abnormalities have rarely been associated with clinical symptoms. Cholestasis, possibly due to PROCARDIA therapy, has been reported twice in the extensive world literature.

HOW SUPPLIED: Each orange, soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedipine. PROCARDIA CAPSULES are supplied in bottles of 100 (NDC 0069-2600-66), 300 (NDC 0069-2600-72), and unit dose (10x10) (NDC 0069-2600-41). The capsules should be protected from light and moisture and stored at controlled room temperature 59° to 77° F (15° to 25° C) in the manufacturer's original container.

More detailed professional information available on request.

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LABORATORIES DIVISION
PFIZER INC.

"I can do things that I couldn't do for 3 yrs. including joining the human race again."

*"My daily routine consisted of
sitting in my chair trying to stay alive."*

*"My doctor switched me to
PROCARDIA[*] as soon as it became
available. The change in my condition
is remarkable."*

*"I shop, cook and can plant
flowers again."*

*"I have been able to do volunteer
work...and feel needed and useful
once again."*

PROCARDIA can mean the return to a more normal life
for your patients—having fewer anginal attacks,¹ taking
fewer nitroglycerin tablets,² doing more, and being more
productive once again.

Side effects are usually mild (most frequently reported
are dizziness or lightheadedness, peripheral edema,
nausea, weakness, headache and flushing, each occurring
in about 10% of patients, transient hypotension in about
5%, palpitation in about 2% and syncope in about 0.5%).

Quotes from an unsolicited
letter received by Pfizer from an
angina patient. While this patient's experience
is representative of many
unsolicited comments received,
not all patients will respond to
Procordia nor will they all
respond to the same degree.

© 1983, Pfizer Inc.



for the varied faces of angina

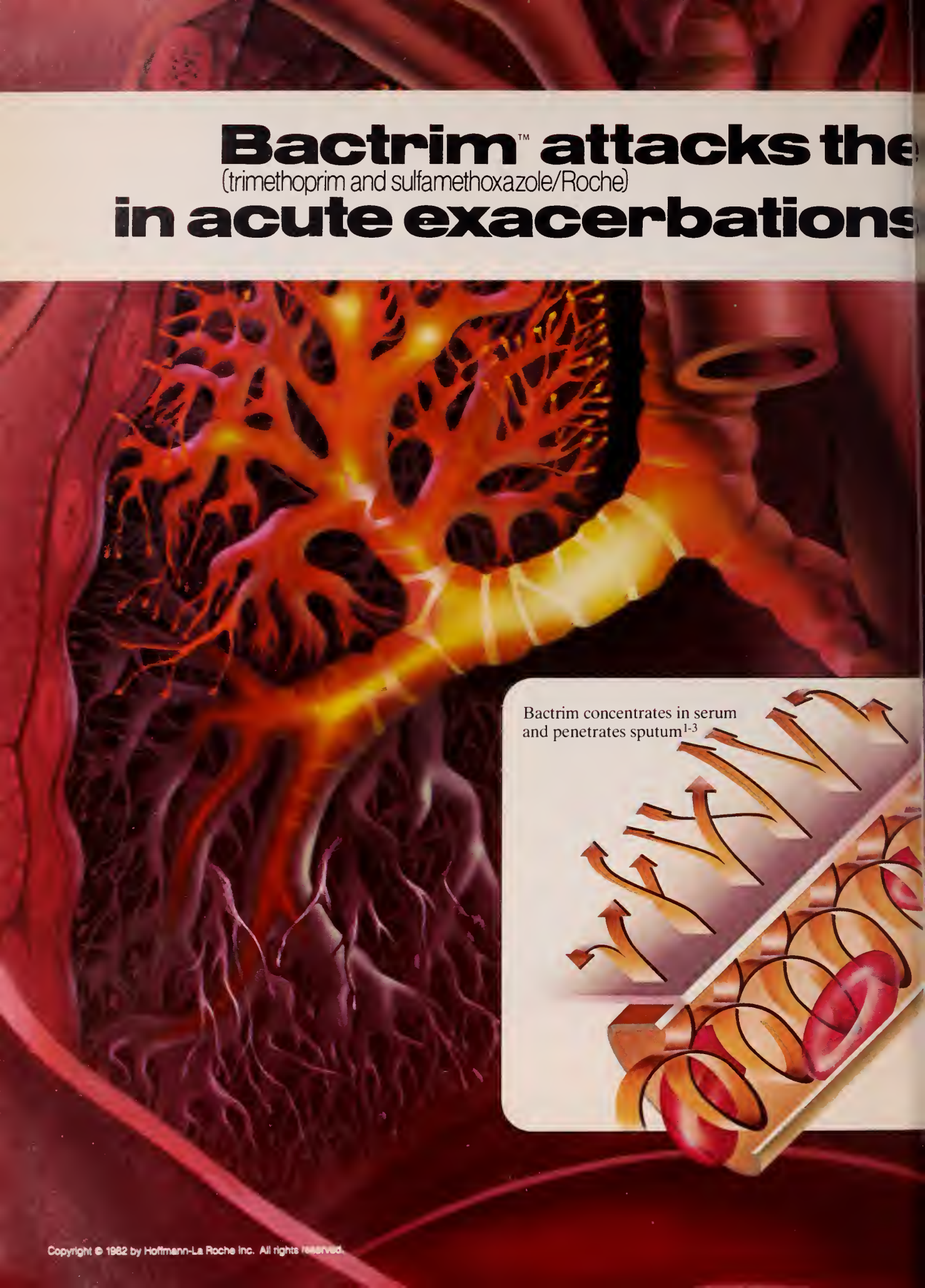
PROCARDIA[®] **(NIFEDIPINE)** Capsules 10 mg

*Procordia is indicated for the management of:

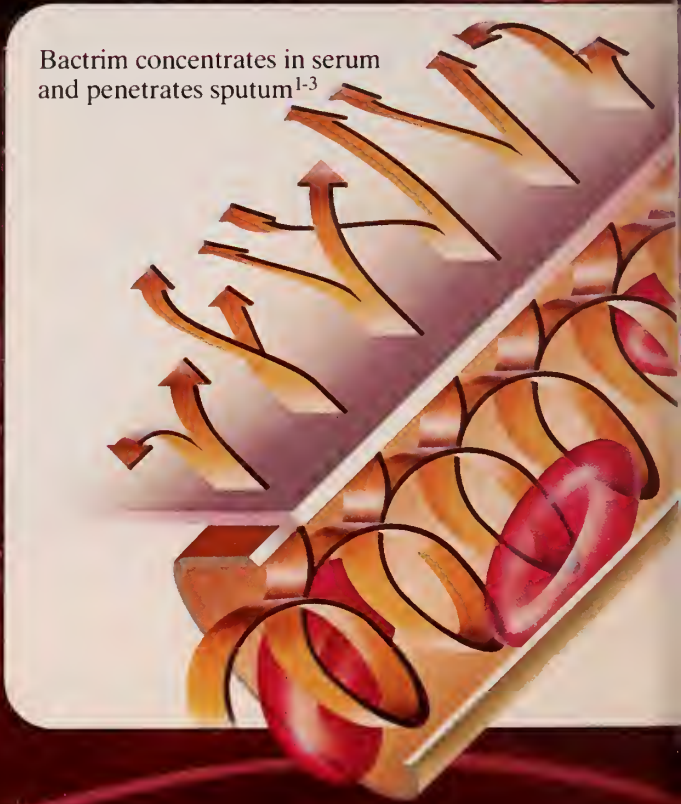
- 1) Confirmed vasospastic angina.
- 2) Angina where the clinical presentation suggests a possible vasospastic component.
- 3) Chronic stable angina without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or nitrates or who cannot tolerate these agents. In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks' duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in these patients are incomplete.

Please see PROCARDIA brief summary on adjoining page.

Bactrim™ attacks the (trimethoprim and sulfamethoxazole/Roche) **in acute exacerbations**



Bactrim concentrates in serum
and penetrates sputum¹⁻³



major pathogens of chronic bronchitis*

Bactrim clears sputum of
susceptible bacteria

In sputum cultures from patients with acute exacerbations of chronic bronchitis, *H. influenzae* and *S. pneumoniae* are isolated more often than any other pathogens.^{4,5} One study of transtracheal aspirates from 76 patients with acute exacerbations found that 80% of the isolates were of these two pathogens.⁵

Bactrim is effective *in vitro* against most strains of both *S. pneumoniae* and *H. influenzae*—even ampicillin-resistant strains. And in acute exacerbations of chronic bronchitis involving these two pathogens, sputum cultures taken seven days after a two-week course of therapy showed that Bactrim eradicated these bacteria in 91% (50 of 55) of the patients treated.⁶

Bactrim reduces coughing
and sputum production

In three double-blind comparisons with ampicillin *q.i.d.*, Bactrim DS proved equally effective on all clinical parameters.^{7,9} Bactrim reduced the frequency and severity of coughing, reduced the amount of sputum produced and cleared the sputum of purulence.

Bactrim has the added advantages of *b.i.d.* dosage convenience and a lower incidence of diarrhea than with ampicillin, and it is useful in patients allergic to penicillins.

Bactrim also proved more effective than tetracyclines in 10 clinical trials

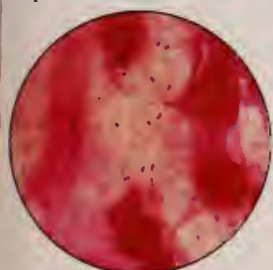
involving nearly 700 patients.¹⁰ Overall clinical condition of the patients, changes in sputum purulence, reduction in sputum volume and microbiological clearance of pathogens—all improved more with Bactrim therapy than with tetracyclines. G.I. side effects occurred in only 7% of patients treated with Bactrim compared with 12% of tetracycline-treated patients. (See Adverse Reactions in summary of product information on next page.)

Bactrim is contraindicated in pregnancy at term and nursing mothers, infants under two months of age, documented megaloblastic anemia due to folate deficiency and hypersensitivity.

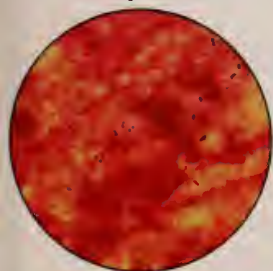
Bactrim DS. For acute exacerbations of chronic bronchitis in adults* when it offers an advantage over single-agent antibacterials.

References: 1. Hughes DTD, Bye A, Hodder P: *Adv Antimicrob Antineoplastic Chemother* 112:1105-1106, 1971. 2. Jordan GW et al: *Can Med Assoc J* 112:91S-95S, Jun 14, 1975. 3. Beck H, Pechere JC: *Prog Antimicrob Anticancer Chemother* 1:663-667, 1969. 4. Quintiliani R: Microbiological and therapeutic considerations in exacerbations of chronic bronchitis, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts*; Princeton Junction, NJ, Communications Media for Education, Inc., 1980, pp. 9-12. 5. Schreiner A et al: *Infection* 6(2):54-56, 1978. 6. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 7. Chodosh S: Treatment of acute exacerbations of chronic bronchitis: results of a double-blind crossover clinical trial, in *Chronic Bronchitis and Its Acute Exacerbations: Current Diagnostic and Therapeutic Concepts*. *Op. cit.*, pp. 15-16. 8. Chervinsky P: Double-blind clinical comparisons between trimethoprim-sulfamethoxazole (Bactrim™) and ampicillin in the treatment of bronchitic exacerbations. *Ibid.*, pp. 17-18. 9. Dulfano MJ: Trimethoprim-sulfamethoxazole vs. ampicillin in the treatment of exacerbations of chronic bronchitis. *Ibid.*, pp. 19-20. 10. Medici TC: Trimethoprim-sulfamethoxazole (Bactrim™) in treating acute exacerbations of chronic bronchitis: summary of European clinical experience. *Ibid.*, pp. 13-14.

attacks *H. influenzae*—even
ampicillin-resistant strains



attacks *S. pneumoniae*



**Economical
b.i.d.**

Bactrim™ DS

(160 mg trimethoprim and 800 mg sulfamethoxazole/Roche)

BactrimTM

(trimethoprim and sulfamethoxazole/Roche)

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli*, *Klebsiella-Enterobacter*, *Proteus mirabilis*, *Proteus vulgaris*, *Proteus morganii*. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. Note: The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections. For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age. For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent. For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonia.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS.

Clinical studies show that patients with group A β -hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hemopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: General: Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients.

Pregnancy: Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folic acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. Blood dyscrasias: Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. Allergic reactions: Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. Gastrointestinal reactions: Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, diarrhea, pseudomembranous colitis and pancreatitis. CNS reactions: Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. Miscellaneous reactions: Drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: Not recommended for infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN:

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:

Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 14 days.

PNEUMOCYSTIS CARINII PNEUMONITIS:

Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

Supplied: Double Strength (DS) tablets, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100; Tel-E-Dose[®] packages of 100; Prescription Paks of 20 and 28 Tablets, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose[®] packages of 100; Prescription Paks of 40. Pediatric Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry flavored—bottles of 100 ml and 16 oz (1 pint). Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); fruit-licorice flavored—bottles of 16 oz (1 pint).

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In vulvovaginitis, Triva[®] douche powder provides symptomatic relief in seconds.

Relief in seconds. That's how quickly Triva goes to work to help your vaginitis patients. And that's just after their first douche. Within 12 days of recommended treatment with Triva, most cases of trichomonal and non-specific vaginitis are organism-free. (Monilia infection may take a bit longer.) Also, your patients can start therapy right away, because with Triva there's no need to worry about contraindications associated with causative organisms.

Triva[®] Douche Powder

Oxyquinoline Sulfate 2.0%, Alkyl Aryl Sulfonate 35.0%, Sodium Sulfate 52.5%, Disodium EDTA .33%.

Combines flushing douche action with the chemical action of its formula. For treatment of *Trichomonas* infestation, Triva Douche Powder may be used adjunctively with oral therapy for fast symptomatic relief.

by clinical testing involving the use of Papanicolaou smear and Sabouraud culture to confirm diagnosis and cure.

Precaution
If irritation occurs at the onset of treatment with Jel, treatment may be postponed for a day or two and preliminary treatment with 1/2 strength Triva Douche used. Regular treatment should then be resumed.

Other Ethically Promoted Products from Boyle & Company:

- Citra Capsules . . . Antihistaminic/Decongestant/Analgesic for cold symptoms relief
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- Glytanic Tablets and Liquid . . . Iron plus aminoacetic acid for iron deficiency anemia

Triva[®]

Douche

Rx Triva[®] Jel

Per 5 grams: oxyquinoline benzoate 7.5 mg.; alkyl aryl sulfonate 62.5 mg.; disodium edetate 2.5 mg.; aminacrine HCl 10 mg.; copper sulfate .063 mg.; sodium sulfate 6.9 mg.

Provides the effective therapeutic action of Triva with the continuous action of the jel form, to quickly arrest infection and aid in relief of symptoms.

Rx Triva[®] Combination

Combines therapeutic Douche Powder and Triva Jel with a handy applicator in a convenient, complete treatment kit. Triva Combination effectively treats all three types of vaginitis, including stubborn cases where *Monilia* and *Trichomonas* occur together. Effectiveness of Triva Combination has been demonstrated



**Boyle & Company/
Pharmaceuticals**
13260 Moore Street,
Cerritos CA 90701

THE EXPERTS AGREE...

ZYLOPRIM® (allopurinol) IS SIMPLE, EFFECTIVE GOUT THERAPY

Unlike uricosuric agents, Zyloprim® (allopurinol) is clearly the choice for:

OVERPRODUCERS/ UNDEREXCRETORS

"One recent suggestion is that overproducers of uric acid are more 'appropriately' treated with allopurinol and underexcretors with uricosuric drugs. Such an argument is superficially attractive but may be specious: most patients with gout... may nevertheless be managed perfectly well with allopurinol."¹

—G. Boss, MD et al

TOPHI, CALCULI, RENAL DISEASE

"... (1) patients with extensive tophaceous disease...; (2) patients with a history of renal calculi... since a uricosuric drug may exacerbate renal stone disease; and (3) patients with significant renal disease... who are unlikely to respond to a uricosuric drug."²

—Edward W. Holmes, Jr, MD

For information on adverse reactions, warnings, etc, please see brief summary of prescribing information below.

ZYLOPRIM® (allopurinol)
100 and 300 mg Scored Tablets

INDICATIONS AND USE: This is not an innocuous drug and strict attention should be given to the indications for its use. Pending further investigation, its use in other hyperuricemic states is not indicated at this time.

Zyloprim® (allopurinol) is intended for:

1. treatment of gout, either primary, or secondary to the hyperuricemia associated with blood dyscrasias and their therapy;
2. treatment of primary or secondary uric acid nephropathy, with or without accompanying symptoms of gout;
3. treatment of patients with recurrent uric acid stone formation;
4. prophylactic treatment to prevent tissue urate deposition, renal calculi, or uric acid nephropathy in patients with leukemias, lymphomas and malignancies who are receiving cancer chemotherapy with its resultant elevating effect on serum uric acid levels.

CONTRAINDICATIONS: Use in children with the exception of those with hyperuricemia secondary to malignancy. The drug should not be employed in nursing mothers.

Patients who have developed a severe reaction to Zyloprim should not be restarted on the drug.

WARNINGS: ZYLOPRIM SHOULD BE DISCONTINUED AT THE FIRST APPEARANCE OF SKIN RASH OR ANY SIGN OF ADVERSE REACTION.

In some instances a skin rash may be followed by more severe hypersensitivity reactions such as exfoliative, urticarial and purpuric lesions as well as Stevens-Johnson syndrome (erythema multiforme) and very rarely a generalized vasculitis which may lead to irreversible hepatotoxicity and death.

A few cases of reversible clinical hepatotoxicity have been noted and in some patients asymptomatic rises in serum alkaline phosphatase or serum transaminase have been

observed. Accordingly, periodic liver function tests should be performed during the early stages of therapy, particularly in patients with pre-existing liver disease. Patients should be alerted to the need for due precautions when engaging in activities where alertness is mandatory.

Occasional cases of hypersensitivity have been reported in patients with renal compromise receiving thiazides and Zyloprim concurrently. For this reason, in this clinical setting, such combination should be administered with caution.

In patients receiving Purinethol® (mercaptopurine) or Imuran® (azathioprine), the concomitant administration of 300-600 mg of Zyloprim per day will require a reduction in dose to approximately one-third to one-fourth of the usual dose of mercaptopurine or azathioprine. Subsequent adjustment of doses of Purinethol or Imuran should be made on the basis of therapeutic response and any toxic effects.

Usage in Pregnancy and Women of Childbearing Age:

Zyloprim should be used in pregnant women or women of childbearing age only if the potential benefits to the patient are weighed against the possible risk to the fetus.

PRECAUTIONS: Some investigators have reported an increase in acute attacks of gout during the early stages of allopurinol administration, even when normal or subnormal serum uric acid levels have been attained.

It has been reported that allopurinol prolongs the half-life of the anticoagulant, dicumarol. This interaction should be kept in mind when allopurinol is given to patients already on anticoagulant therapy, and the coagulation time should be reassessed.

A fluid intake sufficient to yield a daily urinary output of at least 2 liters and the maintenance of a neutral or, preferably, slightly alkaline urine are desirable to (1) avoid the theoretic possibility of formation of xanthine calculi under the influence of Zyloprim therapy and (2) help prevent renal precipitation of urates in patients receiving concomitant uricosuric agents.

Patients with impaired renal function require less drug and should be carefully

The most important therapeutic measure is the administration of a drug which will block urate synthesis. The agent available at present is allopurinol (Zyloprim . . .) which is very effective and of low toxicity."³

—Alfred Jay Bollet, MD

. . . allopurinol treatment appears to retard the progression of renal dysfunction."⁴

—T. Gibson, MD et al

LOW INCIDENCE OF TOXICITY

Clinical experience with allopurinol suggests that most patients tolerate this drug well—a finding strongly supported by our data. Undesired or unintended effects of therapy were reported in only 1.8% of 1835 consecutive recipients."⁵

—G. T. McInnes, MD

Boss G, et al, quoted by Scott JT: Long-term management of gout and peruricemia. *Brit Med J* 281:1164, 1980.

Holmes EW Jr: A rational approach to gout. *Drug Therapy* 11:117-124, 1981.

Bollet AJ: Prevention and treatment of urate nephropathy and uric acid stones. *Resident & Staff Physician* 28:57-64s, 1982.

Gibson T, Highton J, Potter C, et al: Renal impairment and gout. *Ann Rheum Dis* 39:417-423, 1980.

McInnes GT, Lawson DH, Jick H: Acute adverse reactions attributed to allopurinol in hospitalised patients. *Ann Rheum Dis* 40:245-249, 1981.

observed during the early stages of Zyloprim administration and the drug withdrawn if increased abnormalities in renal function appear.

patients with severely impaired renal function, or decreased urate clearance, the half-life of oxipurinol in the plasma is greatly prolonged. Therefore, a dose of 100 mg per day or 300 mg twice a week, or perhaps less, may be sufficient to maintain adequate xanthine oxidase inhibition to reduce serum urate levels. Such patients would be treated with the lowest effective dose, in order to minimize side effects. Mild reticulocytosis has appeared in some patients.

periodic determination of liver and kidney function and complete blood counts should be performed especially during the first few months of therapy.

ADVERSE REACTIONS:

Dermatologic: Because in some instances skin rash has been followed by severe hypersensitivity reactions, it is recommended that therapy be discontinued at the first sign of rash or other adverse reaction (see WARNINGS). Skin rash, usually maculopapular, is the adverse reaction most commonly reported. The incidence of skin rash may be increased in the presence of renal disorders.

Exfoliative, urticarial and purpuric lesions, Stevens-Johnson syndrome (erythema multiforme) and toxic epidermal necrolysis have also been reported.

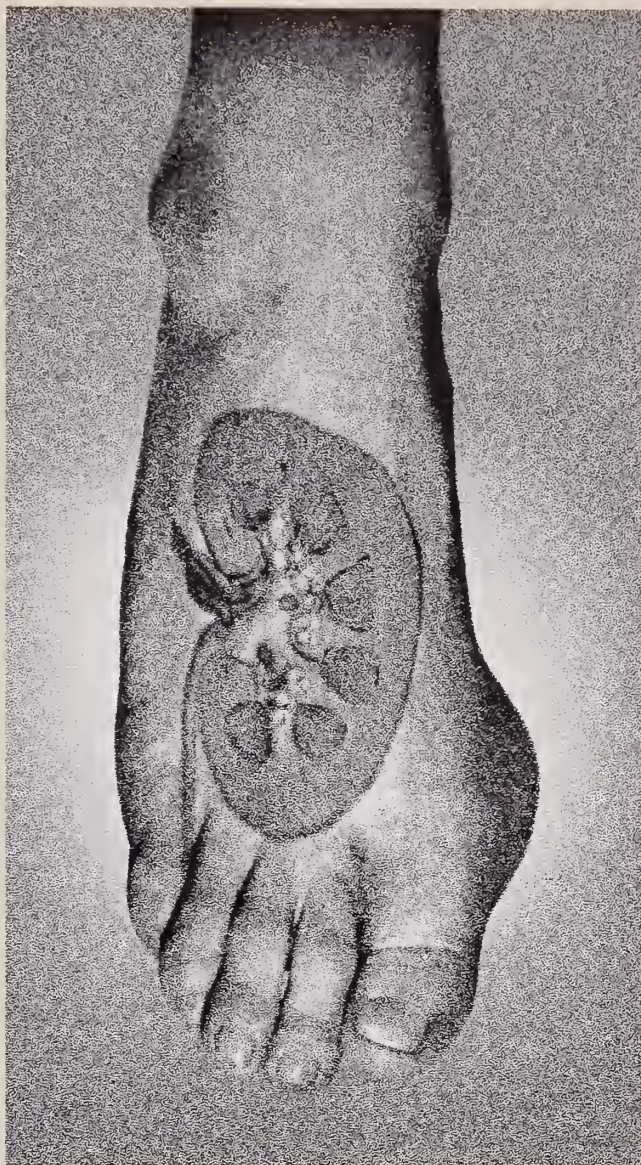
A few cases of alopecia with and without accompanying dermatitis have been reported.

In some patients with a rash, restarting Zyloprim (allopurinol) therapy at lower doses has been accomplished without untoward incident.

Gastrointestinal: Nausea, vomiting, diarrhea, and intermittent abdominal pain have been reported.

Hepatic: Rare cases of granulomatous hepatitis and hepatic necrosis have been reported.

Vascular: There have been rare instances of a generalized hypersensitivity vasculitis or necrotizing angitis which have led to irreversible hepatotoxicity and death.



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Research Triangle Park
North Carolina 27709

Hematopoietic: Agranulocytosis, anemia, aplastic anemia, bone marrow depression, leukopenia, pancytopenia and thrombocytopenia have been reported in patients, most of whom received concomitant drugs with potential for causing these reactions. Zyloprim has been neither implicated nor excluded as a cause of these reactions.

Renal: Rare cases of renal failure have been reported in hypertensive patients who received thiazides and Zyloprim concurrently. Some patients had evidence of hypersensitivity to allopurinol.

Neurologic: There have been a few reports of peripheral neuritis occurring while patients were taking Zyloprim. Drowsiness has also been reported in a few patients.

Ophthalmic: There have been a few reports of cataracts found in patients receiving Zyloprim. It is not known if the cataracts predated the Zyloprim therapy. "Toxic" cataracts were reported in one patient who also received an anti-inflammatory agent; again, the time of onset is unknown. In a group of patients followed by Gutman and Yu for up to five years on Zyloprim therapy, no evidence of ophthalmologic effect attributable to Zyloprim was reported.

Drug Idiosyncrasy: Symptoms suggestive of drug idiosyncrasy have been reported in a few patients. This was characterized by fever, chills, leukopenia or leukocytosis, eosinophilia, arthralgias, skin rash, pruritus, nausea and vomiting.

OVERDOSAGE: Massive overdosing, or acute poisoning, by Zyloprim has not been reported.

HOW SUPPLIED: 100 mg (white) scored tablets, bottles of 100 and 1000; 300 mg (peach) scored tablets, bottles of 30, 100 and 500. Unit dose packs for each strength also available.

Complete information available from your local B. W. Co. Representative or from Professional Services Department PML.

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Mandatory C.M.E. — In Economics

Not so many years ago most physicians were able to estimate, with a reasonable degree of accuracy, what their patients would be charged for medical and hospital care. Accounting practices were primitive. A bed was a bed, a meal was a meal and all pills, potions and poultices were medicines. The average high school student could decipher and understand the partially itemized hospital bill and the average fifth-grader could interpret the physician's statement for professional services. In the rare event of a misunderstanding between debtor and creditor, a five-minute conversation could usually settle the matter. Hospital statements would indicate how much was due for the occupancy of the room — an amount which would include meals and "basic nursing care," — how much was due for medicines and dressings and how much for laboratory and diagnostic services. The physician's statement was even simpler; it showed the amount due for professional services and hospital care.

Today it is most unlikely that even among the few physicians who are relatively well-informed about the economics of medical care, more than ten percent could estimate with any significant degree of accuracy the cost of a ten-day stay in a hospital. Our ability to make a fairly accurate estimate of the cost of the physician's services is much greater, except when such services are in a field which is new or unfamiliar.

Our ignorance of the contemporary realities of medical care costs is profound to say the least, awesome to say the most. We are virtually under siege from our patients and the media because of the high cost of medical care, yet we do nothing to become better informed about the facts which support their complaints. Thus, it seems, our ignorance also is irremediable.

If you have not been horrified recently by the hospital bill received by one of your patients, if you have not been shocked lately by the cost of

a patient's emergency room visit, if you have not been appalled by the paper morass of the itemized charges for hospital care, and if you have not found obscene the fees which some of our colleagues collect, sometimes in advance, for their services, you are indeed one of the ignorant majority. No wonder we seem complacent, unconcerned, aloof. No wonder our patients and the media have found us guilty of conspiring to plunder. If we fail to join the army of critics at war with the rising costs of medical care we are, very simply, guilty of gross neglect if nothing else.

We should, individually and collectively, resolve to remedy our lack of knowledge concerning medical care costs. Three simple yet effective methods of cost monitoring can keep us well-informed and up to date.

First, we must keep track of the costs of the laboratory, x-ray and special diagnostic studies we order most frequently, keeping in mind that many of these procedures generate two separate categories of charges; one covers the technical fees for producing the results and the other for the interpretation of those results.

Next, we must make a habit of asking our patients what they paid a colleague for his professional services, whether surgical or non-surgical.

Finally — and this is something we will, most probably — have to do collectively — insist that a copy of our patients' hospital bills be made available to us. Just as we are required to dictate discharge summaries, hospitals should be required to place in our patient's files at the time of discharge a copy, or at the very least a summary of all charges generated by our orders.

I venture to predict the results of this bit of continuing medical education will be jaw-sagging for most of us. Our ignorance will be displaced by shock. Maybe, just maybe, we will decide it is time for us to get involved and do something to lower the costs of medical care.

Anyone care to make a motion?

— MRJ

Janus In May?

What would a Roman God with two faces be doing in Oklahoma in May? Our dauntless meteorologists can surely watch adequately for tornadoes on primetime television with color radar.

Equally undaunted physicians should get their perspectives a few months earlier, between surplus calories of the holiday season and surfeits of football. Nevertheless, let's use Janus' unique views to scan the clouds for our association.

The past twelve months have certainly brought some tempestuous challenges our way. The Penn Square Bank failure, the changes at the Department of Human Services, the questions of funding and governance at Oklahoma's teaching hospitals, and multiple governmental issues have all buffeted our organization.

Dr John McIntyre's mature judgment and applied wisdom have led us successfully through one of our most eventful years. Many of the issues reaching the president of Oklahoma State Medical Association for decision are by their very nature difficult, "grey zone," and subjective. John has not only seen us through multiple crises, but he has judiciously taken the growth potential that is inherent in any crisis. We all thank you, John, for a task done with skill and with caring.

What, then, is the measure of those black



thunderheads in the southwest? Do they indeed represent threats to our profession and organized medicine? What preparation and action should we be taking? Or, do we have background and figure reversed, and is that only a deep blue sky that is approaching? Surely we must deal with the issues of health care costs, physician supply, physician distribution, relationships with the business community in business health coalitions and other less structured environments, changing relationships with other professionals, drastically altering roles of hospitals, the greatest changes in Medicare in many years, issues of professional liability, regulations, legislation, competition, quality of care, continuing education, space age technology, changing demographics of our Oklahoma population, and alternate health care delivery systems. The list alone is impressive, and certainly not all inclusive.

Perhaps the future's greatest challenge for our organization will come from some unanticipated direction. Regardless, if we can recognize the opportunities within the problems, we can build securely on the year just past. Given the dedication of our staff, the capabilities of our officers and board, the support of our auxiliary and the excellence of our delegation to the American Medical Association, old Janus should see a year of true progress for the Oklahoma State Medical Association.

We all have an abundance of work to do for our patients, and our association.

George H. Kang, M.D.

A Performance Evaluation of the Microbiology and Immunology Course for Second-Year Medical Students

D. J. FLOURNOY, PhD
RICHARD M. HYDE, PhD

This paper evaluates performance of second-year medical students in a microbiology and immunology course. Results suggest that poor performance on the first two examinations can lead to poor course performance.

Most physicians will diagnose and treat infectious diseases during their careers. Yet some medical students have not taken any general or pathogenic microbiology courses as undergraduates, since they are not prerequisites for medical school. Therefore, pathogenic microbiology and immunology are taught to medical students to provide them with basic and practical knowledge which they will need for their subsequent schooling and careers.

The subjects are taught to second-year medical students at the University of Oklahoma Health Sciences Center, Oklahoma City, in a

course titled Etiology and Pathogenesis of Disease (EPD). The 18-week, multidisciplinary, 240 clock-hour course is given each fall semester.

Students who do poorly in their courses are required to repeat them, which results in a great deal of frustration and added expense for students and extra work for faculty. Therefore, we decided to evaluate EPD course performance over the last three years to determine if early, initial examination grades were predictive of overall course performance. If so, perhaps an even greater emphasis could be placed on preventing poor performance and all the problems it creates.

Materials and Methods

Etiology and Pathogenesis of Disease grades from three successive classes of medical students were analyzed. The grades from those students repeating the course were omitted for the year they repeated. However, they were included the first time they took the course. After omitting repeaters, there were 174 students in each of the three classes, combining for a total of 522. The grades were analyzed from an alphabetized list printed by a computer.

A grade of "A" was obtained when examination points totaled at least 92% of those attain-

Table 1. Subject and question breakdown of EPD examinations

Exam #	Subject area	No. of questions per exam ^a
1	Pathology	50
2	Immunology & Microbial Physiology	90
3	Laboratory Midterm	25
4	Pathogenic Bacteriology & Genetics	90
5	Mycology & Parasitology	60
6	Virology	70
7	Laboratory Comprehensive Final	50
8	Lecture Comprehensive Final	100
Total		535

^aThe number of questions per examination is directly related to the amount of material covered and length of a particular test.

able. A grade of "B" required between 83-91%, "C" from 74-82%, "D" from 68-74% and "F" below 68%. All percentages were rounded off to the nearest whole number.

Evaluation of Results

The EPD course is divided into several subject areas and eight examinations, as described in Table 1. Tests with greater point values (#2, 4, 8) required more time to answer.

Course grades for the last three EPD classes are noted in Table 2. One hundred ten students (21%) made grades of C or lower during the three-year period.

Each examination for every class was evaluated as to student performance and predictability of course performance (Table 3). Exam number 4 was consistently the hardest,

Table 2. Comparison of EPD course grades among three classes.

Grade	Class of '81		Class of '80		Class of '79		Total	
	#	%	#	%	#	%	#	%
A	57	33	44	25	16	9	117	22
B	85	49	105	60	105	60	295	57
C	29	17	24	14	49	28	102	20
D	2	1	0	0	4	2	6	1
F	1	<1	0	0	0	0	1	<1
I	0	0	1	<1	0	0	1	<1
Total	174		174		174		522	

I (incomplete), # (number of students)

Table 3. Evaluation of exam performance and predictability for three classes.

Category	% for Exam No.							
	1	2	3	4	5	6	7	8
Poor exam performance ^a								
Class of '81	10	28	4	43	24	21	5	18
Class of '80	9	21	15	39	30	27	9	41
Class of '79	13	33	14	47	44	22	49	26
Total ^b	11	27	11	43	33	24	21	28
Predictability ^c								
Class of '81	72	54	57	41	60	59	68	55
Class of '80	53	56	42	25	42	49	38	31
Class of '79	64	66	67	57	53	72	51	71
Total ^b	65	60	54	46	51	59	50	49

^a % of class scoring less than 83% on a given exam.

^b all three classes combined.

^c number of students scoring less than 83% on a given exam who went on to score less than 83% in course divided by number of students scoring less than 83% on a given exam.

with 43% of all students making grades of C or lower. Of all students making less than a B on Exam 1, 65% made less than a B in the course. Poor performance appears to be more closely related to subject matter than to the number of questions on an examination. For example, the comprehensive final (Exam 8) is the largest and covers the entire course, yet its "difficulty" (as determined by the number of students who get a B) ranks it third.

Table 4 describes the percentage of students who made scores of less than 83% on Exams 1 and 2. Of all the students who made less than a B in the course, 84% made less than a B on either Exam 1 or 2.

Two-thirds of the 522 students made less than 83% on at least one exam. However, of those 178 students who made less than a B on only two of the eight exams, none made less than a B in the course (Table 5). If a student made less than 83% on any four of eight exams, their chances of making a C or lower in the course were great. Of 110 students making

Table 4. Exam performance of students with course grades less than 83%.

Scored less than 83% on Examination(s) no.	% Class of			
	'81	'80	'79	Total
1	40	32	28	33
2	81	80	72	76
1 & 2	38	20	21	25
1 or 2	84	92	79	84

Table 5. Cumulative poor^a exam performance of all medical students.

Students scoring less than 83% on the following no. of exams (out of 8)	% Chances of making less than 83% in course				
	Class of	'81	'80	'79	Total
1		0	0	0	0
2		0	0	0	0
3		43	6	16	21
4		100	33	71	64
5		100	78	100	95
6		100	88	100	95
7		—	100	100	100
8		—	100	100	100

^a less than 83%

course grades of C or below, 1% made C or below on two of eight exams, 14% on three exams, 21% on four exams, 36% on five exams, 18% on six exams, 6% on seven exams, and 4% on eight exams. Of those 110 students, 29% did poorest during the first four exams, 44% during the last four exams, with the remaining 27% performing equally poor on the first and last four exams.

Early Intervention Advised

A single course grade of C is considered average. However, students who do not maintain a B average in all of their courses generally have to struggle. This nonmastery of courses may hinder their subsequent performance. Therefore, a grade of C was considered poor performance in this study, representing the bottom one-fifth of the class.

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The average second-year medical student will make a B in the EPD course. During the semester, he/she will make a C or lower on one or two exams. Chances are the exams will be numbers 4 and 5, which cover pathogenic bacteriology, genetics, mycology, and parasitology.

Those students who make a C or lower in the course most likely will perform poorly on five of the eight exams, with the majority in the last half of the course. However, up to 84% of these students will make a C or lower in one of the first two exams.

Students admitted to medical school have been judged by a group of experienced faculty members to be potentially capable of becoming productive professionals. However, there is no way to assure their success. Each student must give a consistently good effort over many years to achieve his/her goals. Since medical school is so expensive and challenging for these students, it benefits everyone if they complete their coursework with good grades on their

"Students who do poorly in their courses are required to repeat them, which results in a great deal of frustration and added expense for students and extra work for faculty."

first attempt. However, on the other hand, society must not suffer from inadequately skilled physicians.

We have evaluated one course that all medical students are required to pass. The results suggest that a student who makes a C or lower on either of the first two exams should be counselled vigorously right away. Remedial actions should be offered. Undoubtedly, this will require a greater effort from the students and faculty. However, early aggressive efforts might enable some of these students to gain more knowledge than they might otherwise gain. At present, students are counselled only when they receive a D or lower. Results of this study suggest that counselling of C-level students early in the course may reduce poor course performance. This possibility is currently under study. In addition, the counselling system may also need to be improved.

On the other hand, medical school educators are becoming increasingly concerned over

what many consider an information overload for students.¹⁻³ Why does 32% of a medical school class, with high entrance qualifications, earn a grade of F in one or more courses during the first three years¹? With the vast amount of new scientific information accumulating, many educators are emphasizing problem solving and information processing as opposed to rote memorization and simple data storage.^{1, 3, 4} It is therefore possible that a greater effort to counsel students who perform

poorly will not solve a more basic problem of information overload.

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Report of the American Medical Association Council on Scientific Affairs

*This report was selected and reprinted upon the suggestion of
John A. McIntyre, MD, President of the OSMA.*

SUBJECT: Calcium Channel Blocking Agents
PRESENTED BY: William D. Dolan, MD,
Chairman
REFERRED TO: Reference Committee E (Ed-
ward Sattenspiel, MD, Chairman)

The Council on Scientific Affairs is charged with the task of advising the AMA's Board of Trustees "on substantial and promising developments in the scientific aspects of medicine and biomedical research that warrant public attention." Many innovations in diagnosis and drug usage are introduced every year and various award-giving bodies attempt to assess those that will be most important. However, it is difficult to know at what point the medical profession should be alerted to an important new advance, especially when commercial interests are involved. The natural enthusiasm for a novel approach, abetted by good salesmanship, can lead to excessive use of the new treatment which finds its rightful place in the therapeutic armamentarium only some years later, after being tempered by sober experience.

The category of drugs designated as slow calcium channel blocking agents is seeing quick and enthusiastic acceptance in cardiological practice since its initial approval by the Food and Drug Administration (FDA) in 1981. Not only have these drugs lived up to the early promises made by their sponsors, but their ef-

fectiveness in relieving symptoms is sufficiently impressive that both patients and physicians have been quick to accept them. Furthermore, the two initial indications for their use, as recognized by FDA-approved labeling, may be only the first of many. Not only is it reasonable to say that cardiological practices will see a permanent change because of these drugs, but other areas of medical practice will be affected as well.

The Calcium Channel

The calcium ion flux through cell membranes is important in the function of many tissues, including cardiac and smooth muscle. Calcium ions extruded during active depolarization return to the myocardial cells during the slower phase of the action potential associated with the passage of the cardiac impulse. The initial fast change in membrane potential is accompanied by a sodium influx through a different "fast" channel. Thus, the slow calcium channel across the membrane is represented in the slower phase of the action potential and is thought to be important in excitation-contraction and excitation-secretion coupling.

That separate channels exist in the sarcolemma, each with a system of gates, for Na^+ , K^+ , Ca^{++} and perhaps other ions, is now well established. These channels' exact anatomic

Council on Scientific Affairs

structure and mode of action require further elucidation. However, as knowledge of these ion exchanges increases, it is apparent that the rate of rise of the action potential, the duration of contraction, the rate of relaxation, the speed of recovery for reexcitation and the rate of conduction of the nervous impulse are all more or less dependent upon the slow calcium channel action. In fact, the action of beta adrenergic antagonists and of the digitalis glycosides are both in some measure dependent upon the calcium channel.

For at least 15 years, calcium channel (or calcium entry) blocker drugs have been in clinical use in Europe, although their mechanism of action is only currently being appreciated. Drugs that have been used have demonstrated different degrees of selectivity in their effects on vascular smooth muscle, myocardium or specialized conduction and pacemaker tissues which have important clinical implications. This fact has been well confirmed by the differences in chemical structure and pharmacologic activity of the three drugs that have been or will be released for use here by the FDA: nifedipine, verapamil and diltiazem. Additional calcium antagonists are under study and it is anticipated that clinicians may eventually have drugs that will be more specific both as to basic action and as to specific organ affected.

By altering intracellular distribution or binding of calcium in cardiac and smooth muscle cells, these blocking agents dilate coronary and peripheral arterioles, reduce heart rate, decrease myocardial contractility and slow A-V conduction. The electrophysiological and hemodynamic effects vary from one drug to another: according to their selectivity of action on smooth or cardiac muscle or on pacemaker or conduction tissue cells, and depending upon their ancillary properties. Variation also results from the degree to which ventricular afterload reduction and reflex beta-adrenergic response counter their direct negative inotropic, chronotropic and dromotropic effects.

Indications For Use

Angina Pectoris

The only FDA approved therapeutic indication for nifedipine is angina pectoris. It has been demonstrated that coronary spasm can be abolished by acute administration of the drug,

and classical Prinzmetal's variant angina is well controlled by chronic administration. In addition, unstable angina, which often has a component of coronary spasm, has responded better to nifedipine than to nitroglycerin administration. Thus, angina at rest, which is presumed frequently to have an element of spasm, responds to the chronic administration of the drug. Even angina of effort is favorably influenced by chronic use of the drug, although carefully controlled studies suggest the effect may be no better than that seen with chronic use of long-acting nitrates or beta-blockers. Verapamil is as effective as nifedipine in this regard, but has a weaker vasodilatory and hypotensive effect on the systemic circulation and a much stronger depressant effect on S-A and A-V nodal tissue. Verapamil is less often a cause of reflex tachycardia and, in fact, may induce mild bradycardia in addition to carrying significant anti-arrhythmic properties. More double-blind randomized trials comparing one calcium channel blocker with another, with beta blockers, with and without accompanying nitrates are needed. Nevertheless, there is little doubt that these pharmacologic agents aid in the management of several types of angina pectoris, both by relieving coronary spasm and by reducing myocardial work.

When a calcium antagonist and a beta-blocker are used together, the fall in blood pressure may be dangerous, yet there have been instances where, under close monitoring, the combination was more effective in relieving angina than either one alone. Also, the former could supplant a beta-blocker when it was poorly tolerated.

Antiarrhythmic Properties

The first calcium blocker to achieve FDA approval was IV verapamil for the treatment of paroxysmal supraventricular tachycardia. It was also found to slow the ventricular rate in atrial fibrillation and flutter. On the other hand, it does not affect the rate of retrograde conduction in the pre-excitation syndrome and deleterious effects have been seen when using it to treat some cases of atrial fibrillation or tachycardia with the pre-excitation syndrome. Diltiazem has anti-arrhythmic effects comparable to those of verapamil. Nifedipine has little or no anti-arrhythmic properties.

None of these agents is considered to be clinically effective in controlling acute or chronic ventricular ectopic rhythms. Yet, if the ventricular arrhythmia is a manifestation of myo-

cardial ischemia, especially in variant angina, one of them may correct a ventricular ectopy. Verapamil should generally be avoided in the sick sinus syndrome, 2nd or 3rd degree A-V block, cardiogenic shock or congestive heart failure.

Other Cardiovascular Indications

There are several other indications for the use of calcium channel blocking agents, even though beta blocker or other categories of drugs may often serve as well. For example, there have been reports of successful treatment of the following conditions with these agents.

Animal experiments and some clinical experience have suggested that nifedipine may well improve regional flow to ischemic areas and reduce the zone of infarction during the early stages of an *acute myocardial infarction*. On the other hand, the reduction in blood pressure and coronary perfusion pressure and the potential negative inotropic effects on patients with severe myocardial impairment suggest that caution is required in this case. Properly controlled clinical studies will be necessary to determine the safety and efficacy of these agents for this indication.

Hypertrophic cardiomyopathy is now treated by beta-adrenergic blocking agents that control symptoms in many patients and may postpone, if not preclude, operative intervention. Verapamil in preliminary studies on patients with this condition has increased ventricular compliance and ventricular filling, reduced the gradient at the base of the left ventricle, improved the exercise capacity and reversed symptoms of angina with less frequent side-effects than are seen with beta-adrenergic blocking agents. However, the basic physiological effects of the drug may lead to particularly adverse effects in this condition. Thus, the drug should probably be contraindicated in hypertrophic cardiomyopathy with left ventricular obstruction and a high wedge pressure, paroxysmal nocturnal dyspnea or orthopnea, sick sinus syndrome or significant A-V junctional disease. Whether, in fact, a calcium antagonist will supplant the beta-adrenergic blockers in the management of this condition will have to await more extensive controlled clinical studies.

Essential hypertension is known to respond to beta blockade and it appears as though some calcium entry blockers will provide a similar hypotensive effect. There have been early tri-

als using sublingual nifedipine as a potential alternative to diazoxide or sodium nitroprusside in the management of hypertensive emergencies and as an afterload reducing agent in early cardiogenic shock. The ultimate test of whether this or some other calcium channel blocker may be a useful hypotensive agent in the management of chronic essential hypertension will depend upon more long-term clinical studies than yet reported.

Both primary and secondary *pulmonary hypertension* have responded to nifedipine with a subsequent reduction in pulmonary vascular resistance and increased cardiac output. Responsiveness probably depends upon the extent to which smooth muscle vascular spasm in the pulmonary arterial bed is a contributing factor to the hypertension. Preliminary results suggest considerable promise in the management of patients with chronic air flow obstruction and acute respiratory failure. So far, no comparison has been made between any calcium blocking agent and other vasodilators, such as hydralazine and diazoxide, that have also been used in pulmonary hypertension.

Non-cardiovascular Uses of Calcium Antagonists

Because of their effects on smooth muscle contraction, there are many other disordered organ systems that may be affected favorably by these agents. For example, both verapamil and nifedipine have been used successfully in managing certain types of asthma, particularly exercise-induced asthma. The bronchospasm and vascular spasm of asthma is reduced by the channel calcium blockers in contrast to the increase that may be seen with beta blockade. When administered topically by inhalation, they can prevent asthma after exercise in patients who have this symptom pattern. Verapamil does not necessarily counteract asthma triggered by histamine release, but at least these drugs can be used for other indications in patients who do have asthma or chronic obstructive lung disease.

Nifedipine has been shown to be effective in the esophageal motor disorders, achalasia and diffuse esophageal spasm. In clinical studies, significant reductions in lower esophageal sphincter pressure and frequency of spontaneous esophageal contractions and amplitude of distal peristaltic esophageal contractions have been accomplished by the use of nifedipine in some patients with achalasia. Gastric emptying is apparently not affected and reflux

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esophagitis may be aggravated, but painful esophageal spasm can be relieved by sublingual use of nifedipine. Isosorbide dinitrate will bring the same relief, but its side-effects are more troublesome.

There is some indication that verapamil and nifedipine may interfere with platelet function, although their possible role in the control of thromboembolic phenomena has not been studied.

The possible use of these drugs in cerebral vasospasm, intestinal ischemia, and in obstetrical problems still remains to be explored.

Side Effects

These drugs are, in general, well tolerated with few side-effects not anticipated from the pharmacodynamics. Most studies report the incidence of undesirable side-effects to be less than 10%. Nifedipine may lead to flushing, headache, tachycardia, hypotension, dysesthesia and fatigue; while for verapamil, constipation, headache, dizziness, hypotension, fatigue and A-V block are mentioned. Both can cause edema. The drugs are relatively contraindicated in the sick sinus syndrome, second or third degree A-V block, shock and congestive heart failure.

Commentary

Under the Federal Food, Drug and Cosmetic Act, a drug approved by the FDA, "may be labelled, promoted, and advertised by the manufacturer only for those uses for which the drug's safety and effectiveness have been established and which FDA has approved." While this means that adequate and well-controlled clinical trials have documented these uses, it does not preclude the use of that

drug for other less well-documented indications. The FDA itself has noted:

Once a product has been approved for marketing, a physician may prescribe it for uses or in treatment regimens or patient populations that are not included in approved labeling. Such "unapproved" or, more precisely, "unlabelled" uses may be appropriate and rational in certain circumstances and may, in fact, reflect approaches to drug therapy that have been extensively reported in medical literature.⁵

From the above discussion, it can be seen that there is a wide spectrum of cardiovascular and other disorders that may also respond to these calcium channel blocking agents. This new category of drugs provides the promise of many variations upon the three that are already approved by the FDA. It will probably take years before the final role of each of these drugs, in the various indications that have been proposed, will be established.

Conclusion

The Council on Scientific Affairs advises the medical profession that a new class of drugs for the treatment of certain types of angina pectoris and supraventricular arrhythmias has been approved by the FDA.

The Council also reiterates that it is appropriate and legal for physicians to prescribe approved drugs for uses not included in their official labelling when they can be supported as rational and accepted medical practice.

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Consequences of Infections By Epstein-Barr Virus

HARRIS D. RILEY, JR., MD

Epstein-Barr virus (EBV), a member of the herpes group of viruses, is one of the most ubiquitous of human viruses. It is the cause of heterophile-positive infectious mononucleosis and of some heterophile-negative cases. Rarely, it may produce involvement of the central nervous system. The virus is strongly implicated as having an etiologic relationship to African Burkitt lymphoma and to nasopharyngeal cancer. It has possible pathogenetic relations to certain other diseases to be mentioned.¹ The EBV also is a leading candidate for a human viral oncogene.²

The details of the discovery of EBV and the consequences of its infection constitute a fascinating story in modern medical detection.

Infectious mononucleosis (IM) is an acute, usually self-limited infectious disease, recognized most frequently as a clinical entity in older children, adolescents, and young adults. It is characterized by the presence of fever and evidence of lymphoid hyperplasia. These basic findings often are accompanied by pharyngitis, a skin eruption, mild hepatic dysfunction, hematologic abnormalities, and occasionally involvement and dysfunction of virtually all other organ systems.³

The history of IM as a clinical entity dates to the late 19th century in Germany when Emil Pfeiffer in 1889 described *Drusenfieber* or

glandular fever.⁴ West is credited with the first clinical description in North America.⁵ In 1920 Sprunt and Evans⁶ at Johns Hopkins outlined clinical features of the syndrome in further detail, named the condition infectious mononucleosis and described the presence of "atypical lymphocytes." These unusual mononuclear cells, though subsequently found to be associated with many virus infections and other conditions, remain a prominent feature of IM.³

In 1932, Paul and Bunnell⁷ demonstrated the presence of heterophile antibodies to sheep red blood cells in the sera of patients with IM. This important observation was translated into a laboratory diagnostic test which, with minor modifications, continues to be employed.

Search for the etiological agent of infectious mononucleosis began in the 1920s, but met with little success until 1942 when Wising reported the successful transmission of classical infectious mononucleosis to a female medical student volunteer who received 250 ml of blood from a patient ill with the acute disease. This successful experiment was not reproducible by Wising in several other attempts, nor by Bank, who carried out a similar set of volunteer experiments.¹ Attempts to culture etiologically related bacteria and viruses from patients with IM continued in the late 1940s and 1950s but were unsuccessful. Efforts to transmit the dis-

ease to animals failed. Interpretation of experimental efforts to transmit the disease to humans was hindered by the failure to understand the widespread occurrence of asymptomatic infection in preadolescents, as well as the absence of a serologic marker of immunity.^{8,9} Epidemiologically, the key events during this time were the observations of Hoagland, who suggested that the disease might be transmitted by kissing and that the incubation period was of the order of 30 to 49 days.¹

EB Virus Seen As Culprit

Early in 1968, evidence first appeared that EB virus was the cause of infectious mononucleosis.¹⁰ Let us now turn to the story of EB virus.

In 1958 Denis Burkett,¹¹ a British surgeon, described the occurrence of an unusual, rapidly growing, highly lethal tumor in children in Uganda and Central Africa. Following this, pathological studies by O'Connor revealed that the neoplasm was a lymphoma, despite its sparing of lymphoid tissues and its predilection for extranodal sites. O'Connor also noted morphological evidence of intense reticulo-endothelial activity in lymph nodes and spleen and suggested that some form of antigenic stimulation might contribute to the ultimate development of the neoplasm.

This finding led Burkitt to conduct a "tumor safari" throughout Eastern and Central Africa where he obtained rather striking epidemiological data. It is a disease of children and is rare before the age of 2 years and after 20 years. Afflicted children were identified from the eastern to the western coast, delineating a "lymphoma belt" across the continent. Moreover, the incidence of the neoplasm was related to temperature and, inversely, to altitude as distance from the equator increased. In 1964 these observations prompted Dalldorf, in nearby Kenya, to suggest that, since holo-endemic malaria and Burkitt's lymphoma shared a common geographical distribution, malaria, by virtue of sustained immunologic stimulation, might constitute a significant pathogenic factor in lymphomagenesis.²

The concept that the lymphoma might be due to a virus was suggested by Burkitt in 1962. Because of the striking epidemiology, he postulated that the causal agent might be a

vectored virus. However, the initial search for an agent was unsuccessful.¹² In 1964 Epstein and Barr¹³ reported the successful growth of biopsy-derived tumor cells from Burkitt lymphoma tissue in the laboratory; this was followed rapidly by the observation of herpes-like particles in these cultured cells by electron microscopy.¹⁴ The agent was found to be distinct from other known herpes viruses of man, and it was designated as Epstein-Barr virus. Attempts to cultivate EBV in other tissue culture systems were unsuccessful.¹²

In 1966 immunodiffusion lines of identity between antigens from established lymphoblastoid cell lines of Burkitt lymphoma and sera from patients with nasopharyngeal carcinoma were observed.² Evidence for an etiologic role for EBV in the latter neoplasm has been described.⁹

Also in 1966 Drs Gertrude and Werner Henle, at the Philadelphia Children's Hospital, demonstrated in lymphoblastoid cell lines derived from Burkitt lymphoma an antigen that reacted by indirect immunofluorescence with sera from patients with Burkitt lymphoma. This contribution greatly facilitated epidemiological and diagnostic inquiry.^{2,12} The following year, zur Hausen in Germany established that cultured lymphoblastoid cells bearing this antigen ultrastructurally contained a virus similar to that described by Epstein, Achong, and Barr.²

Shortly thereafter a fortuitous event occurred in the Henles' laboratory.¹⁰ While working with EBV, a technician in their laboratory developed clinical, hematological, and heterophile-positive infectious mononucleosis. Her serum, which lacked antibody several months prior to illness, developed EBV antibody during the illness. Whereas presickness blood lymphocytes had failed to grow in culture on human diploid cells, lymphocytes taken during the acute phase of the illness grew within four weeks. Moreover, some 1% to 3% of cultured cells harbored EBV

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antigens. This serendipitous observation was confirmed and led to collaborative studies among the Henles, Nierderman, and McCollum in New Haven, establishing EBV conclusively as the etiologic agent of infectious mononucleosis.^{1, 2}

Further Development Noted

In 1969 and 1970 markedly elevated levels of EBV antibodies were demonstrated by the Henles in sera of patients with nasopharyngeal carcinoma and Burkitt lymphoma. During this same period, EBV-DNA in neoplastic cells of African Burkitt's lymphoma and nasopharyngeal carcinoma was disclosed by means of molecular hybridization studies.²

Two years later Manolov, in Lund, Sweden, reported a characteristic chromosomal defect of the fourteenth chromosome in a high percentage of cells from direct preparations of surgical biopsies and cell cultures originated from African Burkitt's lymphoma.²

In 1973 several major findings were reported. Jondal and Klein in Stockholm demonstrated receptors on B lymphocytes for EBV. Fialkow in Seattle conclusively determined that Burkitt lymphoma is monoclonal neoplasm. Experimental production of lymphomas with EBV in nonhuman primates was reported by Shope *et al* and by Epstein and coworkers.²

In 1975 Purtilo *et al* in Worcester, MA, described a Vermont family, surnamed Duncan, in which male siblings and male maternal cousins demonstrated a selective and alarming vulnerability to EBV infection that pursued a lethal course, terminating in agammaglobulinemia, fatal infectious mononucleosis, or lymphoma.¹⁵ This x-linked lymphoproliferative syndrome (XLP) has since become a valuable model for the study of EBV-host interactions.²

Subsequently, 59 affected males in seven unrelated kindreds have been comprehensively investigated. A spectrum of lymphoproliferative phenotypes was observed. Thirty-four patients (59%) died from IM, eight (14%) had fatal IM and lymphoma (immunoblastic sarcoma), nine (15%) had depressed immunity following EBV infection, and eight (14%) developed lymphoma. Several patients with XLP syndrome lacked EBV antibodies despite infection by EBV. These findings further suggest that EBV can be an oncogenic agent in patients with XLP syndrome who are immune

deficient. At least 100 patients in 25 kindreds with the disorder have now been observed.

Ataxia-telangiectasia, an autosomal recessive disease characterized by progressive cerebellar ataxia, oculocutaneous telangiectasia, and recurrent sinus and pulmonary infections, also is accompanied by various abnormalities of the immune system. It is associated with a high incidence of neoplasia — from 10% to 14% of patients develop leukemia or lymphoma. Chromosomal studies of lymphocytes reveal both breakage and structural rearrangement of the long arm of chromosome 14, a finding that may constitute a premalignant event which predisposes to lymphoid neoplasia. A significant portion of patients studied also show the presence of EBV antibodies, suggesting a smoldering EBV infection.²

The EBV genome now has been identified by molecular hybridization within neoplastic cells of B-cell immunoblastic sarcomas of B lymphocytes that arose in several patients following infectious mononucleosis, thymic epithelial transplantation for severe combined immunodeficiency, and renal heterotransplantation. This finding suggests yet another important result of EBV infection, especially in immunologically vulnerable hosts.²

Most of the pathologic changes associated with EBV infections reflect intense lymphoproliferative stimulation and, as noted, the results of such infection depend upon host reaction.³ At first impression, it may seem unlikely that infection with one virus can induce such a wide variety of host responses to EB infection, including subclinical illnesses, acute self-limited and usually benign febrile disorders such as infectious mononucleosis, and lymphoreticular malignancies such as Burkitt lymphoma and nasopharyngeal carcinoma. However, lymphoproliferation is a common feature. It seems likely that these apparently diverse conditions reflect host differences, some genetically defined, and others indicating developmental and age-related differences, resulting in some instances from environmental pressures.³ EBV might be a causal factor in one setting but not in another and there may be several strains of EBV, some of which are oncogenic and some of which are not.¹⁶

Recent studies suggest that pneumonia is a frequent non-mononucleosis form of EBV infection in young age groups. A number of diseases involving the nervous system have been observed to have an EBV association. These

Virus / RILEY

include the Guillian-Barré syndrome, aseptic meningitis, meningoencephalitis, Bell's palsy, transverse myelitis, and acute cerebellar ataxia.¹⁷ Further study of larger numbers of patients with these disorders is needed to determine the precise relationship of EBV to these disorders.

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News From The Oklahoma State Department of Health

Oklahoma law (63§1-511) requires that a chemoprophylactic agent be placed in the eyes of newborn infants to prevent ophthalmia neonatorum and possible vision impairment resulting from this infection. Based on rules and regulations from the State Board of Health which permit prophylactic agents in addition to the traditional sterile ophthalmic one percent solution of silver nitrate, some specific recommendations for usage have been issued which will be helpful to physicians and hospital staff.

The additional agents authorized include sterile ophthalmic ointment, solution, or sus-

pension of tetracycline, and sterile ophthalmic ointment, solution, or suspension of erythromycin. Specific recommendations for these newer agents and review of the use of ophthalmic one percent solution of silver nitrate should be very useful to those who actually administer these agents.

These recommendations are based on those from the American Academy of Pediatrics, the US Public Health Service, and the National Society to Prevent Blindness. Complete recommendations in typewritten form are available from the OSDH's Pediatric Division, (405) 271-4471. □

COMMUNICABLE DISEASES IN OKLAHOMA FOR FEBRUARY, 1983

DISEASE	FEBRUARY	FEBRUARY	JANUARY	TOTAL TO DATE	
	1983	1982	1983	1983	1982
Amebiasis	—	2	—	—	2
Aseptic Meningitis	6	3	8	14	7
Brucellosis	—	1	—	—	1
Encephalitis, Infectious	2	4	1	3	5
Gonorrhea (Use Form ODH-228)	1254	1144	1368	2622	2399
Hepatitis A	44	53	20	64	70
Hepatitis B	7	22	6	13	32
Hepatitis Unspecified	30	34	12	42	43
Malaria	2	—	—	2	—
Measles (Rubeola)	—	—	—	—	—
Meningococcal Infections	7	3	1	8	6
Pertussis	3	1	1	4	1
Rabies (Animal)	8	10	5	13	24
Rocky Mountain Spotted Fever	—	—	—	—	—
Rubella	—	1	—	—	1
Salmonellosis	63	12	15	78	25
Shigellosis	7	33	5	12	65
Syphilis (Use Form ODH-228)	24	14	22	46	30
Tetanus	—	—	—	—	—
Tuberculosis	23	40	20	43	66
Tularemia	—	—	—	—	—
Typhoid Fever	—	1	—	—	2

Dr George Kamp of Tulsa Is New President of OSMA

Tulsa radiologist George H. Kamp, MD, is the new president of the Oklahoma State Medical Association. He succeeds John A. McIntyre, MD, of Enid, who served as 1982-1983 president of OSMA.



Dr Kamp received his MD from the University of Arkansas School of Medicine and completed his residency in radiology in Arkansas. He served in the US Army from 1964 to 1966, including a tour of Vietnam.

In 1977 Dr Kamp became an ex-officio member of the OSMA Board of Trustees and since that time has served the board with distinction. He has held the posts of vice-speaker and speaker of the OSMA House of Delegates and vice-president of the association before becoming president-elect. Dr Kamp is a member of the Tulsa City-County Board of Health and was president of the board in 1981. In 1978 he served as president of the Tulsa County Medical Society.

He is married to Carol Bailey Kamp and has four children — Peter, a freshman medical student at the University of Oklahoma; Lisa Steedman, a student at the University of Tulsa; David, and Marcus. □

AMA's Education Foundation Adds to Student Assistance

The American Medical Association Education and Research Foundation (AMA-ERF) has added a new fund in 1983, the AMA-ERF Medical Student Assistance Fund. The purpose of the fund will be to add resources to the student

financial aid programs of medical schools, especially the student loan programs.

The foundation has informed the deans of US medical schools of the new program. The AMA-ERF hopes to attract substantial resources for student assistance over the coming years.

Donors will be encouraged to select the school to benefit from their gifts to the new fund. Each medical school will receive a list of the donors and their designated gifts on a monthly basis. The collected funds will be disbursed once a year. State medical associations will be asked to present the checks at the time the annual unrestricted AMA-ERF gift is presented. Schools will receive two AMA-ERF checks beginning in 1984.

A gift to AMA-ERF that is designated for a school will be transmitted without a deduction for AMA-ERF expenses. Thus, a designated \$100 gift will provide \$100 for a school's student assistance program.

While the AMA-ERF expects that its new fund will generate great interest among contributors in 1983, the foundation will continue its unrestricted Medical School Fund program which was begun in the early 1950s. □

Leadership Manual Provides Orientation for Foreign Grads

A leadership manual titled *Dynamics of Political Participation* and written for international physicians and foreign medical graduates is available on request from the American College of International Physicians.

The book was published with the help of a grant from the Educational Commission for Foreign Medical Graduates (ECFMG) and contains material helpful in orienting FMGs to medical organizations and their functions.

Chapters cover a variety of subjects, including American political culture, guidelines for medical leaders, American government and the legislative process, public policymaking, parliamentary procedure, and roles of the groups making up organized medicine in America.

Requests for the book should be sent to the American College of International Physicians, 3030 Lake Avenue, Suite 9, Fort Wayne, Indiana 46805. There is no charge for the book; however, there is a limit of one copy per request. □

Oklahoma Hospital Offers 24-Hour Delivery Service

A new 24-hour delivery service is now available to women who choose to have their babies at Oklahoma Memorial Hospital in Oklahoma City.

Besides saving on hospital costs, the families using this service receive home visits by a nurse twice during the first week after leaving the hospital.

The service includes prenatal visits by obstetrics nurse practitioners who inform the family about what to expect during and after delivery and how to insure proper care for mother and baby.

Hospital officials estimate that 1,500 of the facility's obstetrics patients would be eligible for the service. Sponsored by the obstetrics and family medicine services, the new service provides for an assessment during a woman's first prenatal visit to determine her eligibility.

Those who are eligible and who choose the 24-hour delivery service are placed with their babies in a separate area in the hospital's postpartum wing, with nurses available to prepare them for their first days at home. □



Tulsa physician Robert G. Tompkins, MD, shows a photograph of Saint Francis Hospital to Pope John Paul II and asks the Pope to bless the hospital. Dr Tompkins visited the Vatican last fall during his trip to Rome for the International Congress of Catholic Physicians. □

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Publications Judges Award Honorable Mention to Journal

The *Journal of the Oklahoma State Medical Association* has been awarded an honorable mention in the state medical journal category of the eighth annual Sandoz Medical Journalism Competition.

Criteria for the award include excellence in design and editorial content. The association and the *Journal* staff were presented with a Medical Journalism Award certificate in recognition of their accomplishments.

First prize in this year's contest went to the *Journal of the Florida Medical Association*. □

Patient Instruction Sheets Cover 20 Additional Drugs

The American Medical Association (AMA) now has available to physicians 20 new Patient Medication Instruction (PMI) leaflets.

The new PMIs cover the following drugs:

lithium, haloperidol, hydralazine, guanethidine, valproic acid, ethosuximide, allopurinol, oral xanthine derivatives, thyroid replacement, metronidazole, oral clindamycin/lincomycin, oral chloramphenicol, levodopa/carbidopa and levodopa, ergot derivatives, indomethacin, phenylbutazone/oxyphenbutazone, quinidine/procainamide, iron supplements, verapamil, and nifedipine.

The addition of these PMIs brings to 40 the number of instruction sheets covering commonly prescribed drugs or drug classes. PMIs are a simple and inexpensive way to help physicians communicate drug information to patients at the time a prescription is written. Sheets are printed on both sides in clear language detailing the purpose of the drug, how it is to be taken, and what possible side effects it may have.

PMIs are bound in pads of 100 sheets and are available to physicians for 50 cents per pad. They may be ordered from the PMI Order Department, American Medical Association, PO Box 52, Rolling Meadows, Illinois 60008. □



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Healthy People Need Medical Exams at Regular Intervals

Healthy young adults should have medical examinations once every five years; youngsters every year or two; and people in their prime (40 to 65 years old) at one- to three-year intervals, according to recommendations from major medical specialty organizations and the American Medical Association.

The guidelines are based on the premise that periodic medical evaluations of healthy individuals is important for the early detection of disease, particularly such treatable conditions as amblyopia, diabetes mellitus, cervical cancer, hypertension, and glaucoma. With regular surveillance, a physician can also recognize the development of risk factors for disease and can intervene with counseling and treatment.

The frequency of these examinations and the procedures to be performed will vary with the patient's age, occupation, socioeconomic status, heredity, and other individual factors.

A recommendation also was made that physicians improve their skills in dealing with patients' lifestyle problems such as hypertension, obesity, anxiety, and depression, and excessive use of alcohol, tobacco, and drugs. □

President's Council Urges Support of Fitness Goals

The President's Council on Physical Fitness and Sports is urging physicians to support and work actively toward attaining its 1990 National Exercise and Fitness Goals.

Objectives endorsed by the council and developed by the Public Health Service specify the proportion of children, adolescents, and adults that should be participating regularly in physical fitness activities by 1990; the proportion of employees of companies and institutions that should have access to employer-sponsored fitness programs by 1990; and the data that need to be available to assess and evaluate the effects of participation in physical fitness programs.

Included in the objectives is a recommendation that by 1990, the proportion of primary care physicians who include a careful

exercise history as part of their initial examination of new patients should exceed 50%.

Copies of the council newsletter that outlines the 1990 National Exercise and Fitness Goals may be obtained from Glenn V. Swengros, Director, Federal-State Relations, The President's Council on Physical Fitness and Sports, 450 5th Street, NW, Suite 7103, Washington, DC 20001. □

CPI Medical Care Sector Continues to Rise Rapidly

While other inflation rates are holding steady, the medical care sector of the Consumer Price Index (CPI) continues to experience double-digit rates of inflation. The medical care component of the CPI rose at an annualized rate of 12.8% in February. The physicians' services component increased at a slightly higher rate, while the hospital room component rose at a substantially higher rate. □

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Deaths

VIRGIL RAY FORESTER, MD
1907 - 1983

Virgil Ray Forester, MD, retired Oklahoma City internist, died March 8, 1983. A native of Shawnee, Dr Forester had received a doctorate in science degree from the University of Missouri and was graduated from the University of Oklahoma College of Medicine in 1944. He had taken post-graduate work in gastroenterology and psychiatry. Following his retirement in 1976, he served as consultant with the Department of Human Services for the State of Oklahoma. In 1977 the OSMA awarded Dr Forester a Life Membership.

SELWYN A. WILLIS, MD
1922-1982

Selwyn A. Willis, MD, 60, a Tulsa specialist in occupational medicine, died March 3, 1983. A native of Bowie, Texas Dr Willis was graduated from Southwestern Medical School of the University of Texas in 1954. He practiced in Arlington, Texas for five years before establishing his practice in Tulsa. Dr Willis served with the US Air Force during World War II. □

In Memoriam

1982

<i>A. A. Walker, MD</i>	<i>July</i>
<i>Wesley Russell Mote, MD</i>	<i>July 24</i>
<i>Thomas H. Fair, MD</i>	<i>August 15</i>
<i>Clyde E. Harris, MD</i>	<i>September 1</i>
<i>Tillman A. Ragan, MD</i>	<i>September 5</i>
<i>Floyd T. Hubbard, MD</i>	<i>September 23</i>
<i>William A. Eastland, MD</i>	<i>October 3</i>

<i>William J. Craig, MD</i>	<i>October 19</i>
<i>William M. Wood, MD</i>	<i>October 30</i>
<i>Hugh C. Graham, Sr., MD</i>	<i>November 11</i>
<i>John David Wilson, MD</i>	<i>November 11</i>
<i>Clinton Gallaher, MD</i>	<i>November 15</i>
<i>Bert F. Keltz, MD</i>	<i>November 30</i>
<i>Berget H. Blocksom, MD</i>	<i>December 26</i>
<i>Harold T. Baugh, MD</i>	<i>December 28</i>

1983

<i>Dewey K. Rhea, MD</i>	<i>January 3</i>
<i>Fred C. Buffington, MD</i>	<i>January 4</i>
<i>C. D. Cunningham, MD</i>	<i>January 26</i>
<i>William S. Jacobs, MD</i>	<i>February 9</i>
<i>John R. Little, MD</i>	<i>February 11</i>
<i>L. A. S. Johnston, MD</i>	<i>February 16</i>
<i>Selwyn A. Willis, MD</i>	<i>March 3</i>
<i>Virgil Ray Forester, MD</i>	<i>March 8</i>



POSITION ANNOUNCEMENT

City Physician
City of Tulsa, Oklahoma

Position Description

The City Physician is responsible for the operation and maintenance of a City health facility which provides treatment of minor injuries and general health care examinations for all City employees. This position works under general direction from the Personnel Director in establishing appropriate medical procedures and records keeping systems to assure a high standard of health service in the practice of Occupational Medicine.

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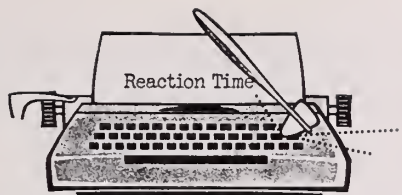
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Employment Application

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Personnel Department
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Tulsa, OK 74103
AC 918-592-7436

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An Open Letter from the Oklahoma Alliance on Aging to the Practicing Physicians of Oklahoma

Dear Friends:

This letter is written in the hope that it may be the beginning of a candid and friendly dialogue to address health care concerns which are important to elderly Oklahomans and to their doctors. Three years ago the major impetus for organization of the Oklahoma Alliance on Aging was provided by the need for nursing home reform and for creative combinations of health and supportive services which would enable more of our frail elderly people to remain in their own homes. We have made some limited progress in these areas. Although numerous other kinds of issues are now on the alliance agenda, health care matters remain very high on our list.

The alliance is a statewide coalition of organizations, agencies, and individuals representing about 300,000 people, working to improve the quality of life for older Oklahomans. A great many of our members, including myself, are volunteers. My background is in the health field, originally as a medical parasitologist. I have prepared some of the state's major health manpower reports. At age 62, I am not yet eligible for Medicare, but my husband is now one of its beneficiaries.

As a result of the participation of a few physicians in meetings of the Oklahoma Senate Special Committee on Medicare, the opportunity to initiate this kind of communication was offered. The Medicare Committee was created in response to a request from the Alliance on Aging and the Silver Haired Legislature for meetings to bring together all parties involved to consider what might be done at the state level to address problems with Medicare Part B. Tip of this very large iceberg is the perception that too few physicians accept Medicare assignment. This has been interpreted by many elderly people,

when coupled with their individual experiences, to mean that doctors are usually insensitive to health care costs and uncaring about the financial difficulties and life stresses of growing old. Personal losses and the struggle to survive are integral to the health status of the old.

Paradoxically, older people who have long-term family physicians, and even those who do not, usually have enormous personal respect for the doctor who cares for them. They nearly always pay their medical bills. A few of them do this silently even though they may not be able to afford to fill prescriptions and may be doing without other necessities. They have been too timid or too proud to ask for help, and many who need to file Medicare claims have failed to do so because they have been confused by the forms. Bills often are not itemized. Occasionally there are reports of doctors who charge five dollars to complete a Medicare form. More communication is clearly needed between elderly patients and their physicians, with the responsibility resting on both sides.

Oklahoma physicians are conservative. Some flatly state that they do not work for the federal government and they resent the intrusion of Medicare into the doctor-patient relationship. They say Medicare has created unreasonable expectations. They point out that doctors deliver a significant amount of charity care. While appreciating what doctors are saying about charity care, I am troubled because charity, dignity, and hope rarely go hand in hand. Dignity and hope are profoundly important to the elderly.

Senator Bernest Cain chaired the Oklahoma Senate Medicare Committee meetings, and I served as vice-chairman. We studied an enormous amount of information. We noted that the outdated Medicare Economic Index is unrealistic and has led to serious inequities which are worsened by urban-rural differentials. We also noted that the use by Medicare of charge "profiles" for individual physicians provided an incentive to doctors to increase charges for a service in order to raise the area Medicare allowable reimbursement. There are certainly major flaws in the system. Medicare is not going to go away, however, and we shall have to work realistically to address the problems.

When the Senate Committee started to meet in May of 1982, the rate of acceptance of assignment of Medicare claims was about 41 per cent, lowest in our region. As the committee

finished its work in February of 1983, the rate had dropped to 36.1 per cent. In November of 1982 it was only 32.9 per cent. The national average, meanwhile, has increased slightly to 52.8 percent. We did not find that reimbursement rates were lower in Oklahoma than in many other states that had much higher assignment rates. Claim processing and related services were discussed. Comments both pro and con have been made about the effectiveness of the Part B carrier in Oklahoma.

We expect to listen thoughtfully to your re-

sponses. We also hope you may choose to help in some specific ways. Most of the young people who enter medical school do so with tremendous idealism. By the time they complete their residencies and enter medical practice, overwhelming realities have engulfed them. I believe the idealism, although sometimes latent, is always there.

Sincerely,

Vivian S. Smith, PhD
Chairman, Oklahoma
Alliance on Aging

□

Miscellaneous Advertisements

FOR SALE: Bennett IPPB therapy unit; office size motorized suction machine and treatment table (Sklar Co.); hydraulic treatment chair with Ritter unit; operating lamp, model 400; heat lamp; eye, ear nose and throat office instruments; water sterilizer and Beltone Audiometer. Contact J. Morgan Bush, MD, 713 Sugar Maple St., Ponca City, OK 74601. (405) 765-3466.

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A 162-BED JCAH accredited hospital looking for a board certified anesthesiologist. Immediate need. Good opportunity, hospital has plans for new surgery suite. Hospital located in outdoor recreational area close to lakes. Contact Howard Walker, Administrator, Memorial Hospital, Ardmore, OK, (405) 223-5400. □

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Available in 2-mg, 5-mg and 10-mg scored tablets, Valium enables you to titrate dosage to individual patient needs. For the geriatric patient, a starting dosage of 2 to 2½ mg once or twice a day is recommended. And, for patients who forget or skip medication, you can prescribe Valrelease™ (diazepam/Roche) 15-mg slow-release capsules,

knowing that Valrelease will assure all the benefits of Valium 5 mg *t.i.d.* with the convenience of once-a-day dosage.

Discontinuation of Valium (or Valrelease) is typically as smooth as its start in short-term therapy. However, Valium and Valrelease should be discontinued gradually after more extended treatment. As you diminish dosage, the built-in tapering action of Valium and Valrelease will help avoid rapidly recurring anxiety symptoms and symptoms of withdrawal, and will help ease the patient's transition to independent coping when therapeutic goals have been achieved.

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Before prescribing, please consult complete product information, a summary of which follows:

Indications: Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, impending or acute delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in: relief of skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome. *Oral forms* may be used adjunctively in convulsive disorders, but not as sole therapy. *Injectable form* may also be used adjunctively in: status epilepticus; severe recurrent seizures; tetanus; anxiety, tension or acute stress reactions prior to endoscopic/surgical procedures; cardioversion.

The effectiveness of diazepam in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindications: Tablets or capsules in children under 6 months of age; known hypersensitivity; acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: As with most CNS-acting drugs, caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals (drug addicts or alcoholics) under careful surveillance because of predisposition to habituation/dependence.

Use in pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because their use is rarely a matter of urgency and because of increased risk of congenital malformations, as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

ORAL: Advise patients against simultaneous ingestion of alcohol and other CNS depressants.

Not of value in treatment of psychotic patients; should not be employed in lieu of appropriate treatment. When using oral forms adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication; abrupt withdrawal in such cases may be associated with temporary increase in frequency and/or severity of seizures.

INJECTABLE: To reduce the possibility of venous thrombosis, phlebitis, local irritation, swelling and, rarely, vascular impairment when used IV: inject slowly; taking at least one minute for each 5 mg (1 ml) given; do not use small veins, i.e., dorsum of hand or wrist; use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer injectable Valium directly IV, it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Administer with extreme care to elderly; very ill, those with limited pulmonary reserve because of possibility of apnea and/or cardiac arrest, concomitant use of barbiturates, alcohol or other CNS depressants increases depression with increased risk of apnea; have resuscitative facilities available. When used with narcotic analgesic eliminate or reduce narcotic dosage at least 1/3; administer in small increments. Should not be administered to patients in shock, coma, acute alcoholic intoxication with depression of vital signs.

Has precipitated tonic status epilepticus in patients treated for petit mal status or petit mal variant status. Not recommended for OB use.

Efficacy/safety not established in neonates (age 30 days or less); prolonged CNS depression observed. In children, give slowly (up to 0.25 mg/kg over 3 minutes) to avoid apnea or prolonged somnolence; can be repeated after 15 to 30 minutes. If no relief after third administration, appropriate adjunctive therapy is recommended.

Precautions: If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of diazepam, i.e., phenothiazines, narcotics, barbiturates, MAO inhibitors and antidepressants. Protective measures indicated in highly anxious patients with accompanying depression who may have suicidal tendencies. Observe usual precautions in impaired hepatic function; avoid accumulation in patients with compromised kidney function. Limit oral dosage to smallest effective amount in elderly and debilitated to preclude ataxia or over-sedation (initially 2 to 2½ mg once or twice daily, increasing gradually as needed and tolerated).

The clearance of diazepam and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

INJECTABLE: Although promptly controlled, seizures may return; readminister if necessary; not recommended for long-term maintenance therapy. Laryngospasm/increased cough reflex are possible during peroral endoscopic procedures: use topical anesthetic, have necessary countermeasures available. Hypotension or muscular weakness possible, particularly when used with narcotics, barbiturates or alcohol. Use lower doses (2 to 5 mg) for elderly/debilitated.

Adverse Reactions: Side effects most commonly reported were drowsiness, fatigue, ataxia. Infrequently encountered were confusion, constipation, depression, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity,

insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, discontinue drug.

Because of isolated reports of neutropenia and jaundice, periodic blood counts, liver function tests advisable during long-term therapy. Minor changes in EEG patterns, usually low-voltage fast activity, observed in patients during and after diazepam therapy are of no known significance.

INJECTABLE: Venous thrombosis/phlebitis at injection site, hypoactivity, syncope, bradycardia, cardiovascular collapse, nystagmus, urticaria, hiccups, neutropenia. In peroral endoscopic procedures, coughing, depressed respiration, dyspnea, hyperventilation, laryngospasm/pain in throat or chest have been reported.

Dosage: Individualize for maximum beneficial effect.

ORAL Adults: Anxiety disorders, relief of symptoms of anxiety—Valium (diazepam/Roche) tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 Valrelease capsules (15 to 30 mg) daily. Acute alcohol withdrawal—tablets, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; or 2 capsules (30 mg) the first 24 hours, then 1 capsule (15 mg) daily as needed. Adjunctively in skeletal muscle spasm—tablets, 2 to 10 mg t.i.d. or q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily. Adjunctively in convulsive disorders—tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily.

Geriatric or debilitated patients: Tablets—2 to 2½ mg 1 or 2 times daily initially, increasing as needed and tolerated (see Precautions). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose.

Children: Tablets—1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use in children under 6 months). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose (not for use in children under 6 months).

INJECTABLE: Usual initial dose in older children and adults is 2 to 20 mg I.M. or IV, depending on indication and severity. Larger doses may be required in some conditions (tetanus). In acute conditions injection may be repeated within 1 hour, although interval of 3 to 4 hours is usually satisfactory. Lower doses (usually 2 to 5 mg) with slow dosage increase for elderly or debilitated patients and when sedative drugs are added. (See Warnings and Adverse Reactions.)

For dosages in infants and children see below; have resuscitative facilities available.

I.M. use: by deep injection into the muscle.

IV use: inject slowly; take at least one minute for each 5 mg (1 ml) given. Do not use small veins, i.e., dorsum of hand or wrist. Use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute Valium with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Valium directly IV, it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Moderate anxiety disorders and symptoms of anxiety, 2 to 5 mg I.M. or IV, and severe anxiety disorders and symptoms of anxiety, 5 to 10 mg I.M. or IV, repeat in 3 to 4 hours if necessary; acute alcohol withdrawal, 10 mg I.M. or IV initially, then 5 to 10 mg in 3 to 4 hours if necessary. Muscle spasm, in adults, 5 to 10 mg I.M. or IV initially, then 5 to 10 mg in 3 to 4 hours if necessary (tetanus may require larger doses); in children administer IV slowly; for tetanus in infants over 30 days of age, 1 to 2 mg I.M. or IV, repeat every 3 to 4 hours if necessary; in children 5 years or older, 5 to 10 mg repeated every 3 to 4 hours as needed. Respiratory assistance should be available.

Status epilepticus, severe recurrent convulsive seizures (IV route preferred), 5 to 10 mg adult dose administered slowly, repeat at 10- to 15-minute intervals up to 30 mg maximum. Repeat in 2 to 4 hours if necessary; keeping in mind possibility of residual active metabolites. Use caution in presence of chronic lung disease or unstable cardiovascular status. Infants (over 30 days) and children (under 5 years), 0.2 to 0.5 mg slowly every 2 to 5 min., up to 5 mg (IV preferred). Children 5 years plus, 1 mg every 2 to 5 min., up to 10 mg (slow IV preferred); repeat in 2 to 4 hours if needed. EEG monitoring may be helpful.

In endoscopic procedures, titrate IV dosage to desired sedative response, generally 10 mg or less but up to 20 mg (if narcotics are omitted) immediately prior to procedure; if IV cannot be used, 5 to 10 mg I.M. approximately 30 minutes prior to procedure. As preoperative medication, 10 mg I.M.; in cardioversion, 5 to 15 mg IV within 5 to 10 minutes prior to procedure. Once acute symptomatology has been properly controlled with injectable form, patient may be placed on oral form if further treatment is required.

Management of Overdosage: Manifestations include somnolence, confusion, coma, diminished reflexes. Monitor respiration, pulse, blood pressure; employ general supportive measures, IV fluids, adequate airway. Use levarterenol or metaraminol for hypotension. Dialysis is of limited value.

How Supplied:

ORAL Valium scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100 and 500; Prescription Paks of 50, available in trays of 10; Tel-E-Dose® packages of 100, available in trays of 4 reverse numbered boxes of 25 and in boxes containing 10 strips of 10.

Valrelease (diazepam/Roche) slow-release capsules—15 mg (yellow and blue), bottles of 100; Prescription Paks of 30.

INJECTABLE: Ampuls, 2 ml, boxes of 10; Vials, 10 ml, boxes of 1; Tel-E-Ject® (disposable syringes), 2 ml, boxes of 10. Each ml contains 5 mg diazepam, compounded with 40% propylene glycol, 10% ethyl alcohol, 5% sodium benzoate and benzoic acid as buffers, and 1% benzyl alcohol as preservative.



Cardiovascular Disease: Prevention and Recovery

RALPH PAFFENBARGER, M.D.
*Epidemiologist,
Stanford University*

WILLIAM CASTELLI, M.D.
*Medical Director,
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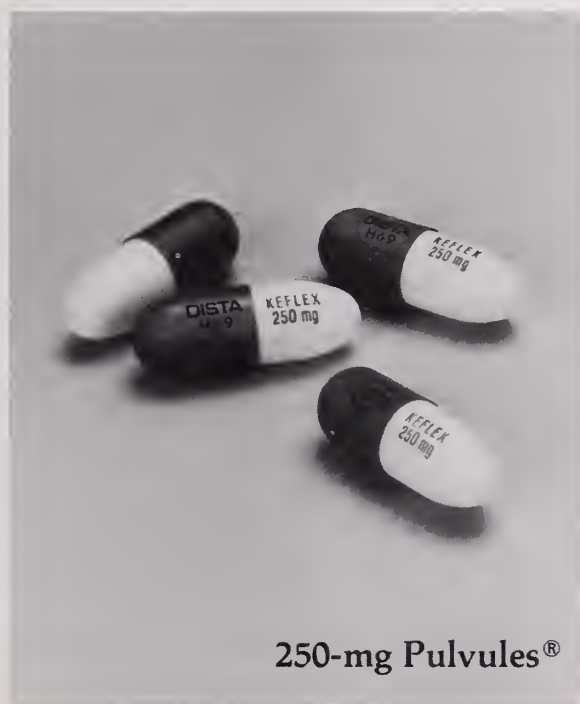
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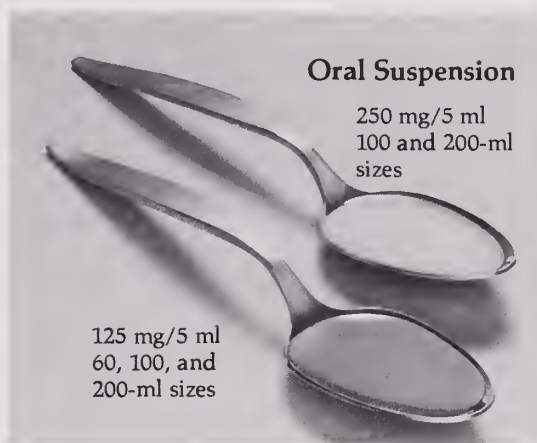
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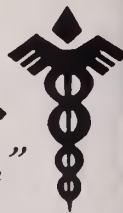


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worse than either alone.

And since they're usually both

present in musculoskeletal
disorders, the best therapy is
often a combination of anal-
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See important information on next page.

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Effective analgesic/anxiolytic alliance

Proven superior to aspirin alone in controlled clinical trials

(BRIEF SUMMARY)

DESCRIPTION: Each tablet contains 200 mg meprobamate and 325 mg aspirin.

INDICATIONS: Adjunct in short-term treatment of pain accompanied by tension and/or anxiety in patients with musculoskeletal disease. Clinical trials demonstrated in these situations relief of pain is somewhat greater than with aspirin alone. Effectiveness in long-term use, i.e. over 4 months, has not been assessed by systematic clinical studies. Physicians should periodically reassess usefulness of drug for individual patients.

CONTRAINDICATIONS: ASPIRIN: Allergic or idiosyncratic reactions to aspirin or related compounds. MEPROBAMATE: Acute intermittent porphyria, allergic or idiosyncratic reactions to meprobamate or related compounds, e.g. carisoprodol, mebutamate, or carbamate.

WARNINGS: ASPIRIN: Use salicylates with extreme caution in patients with peptic ulcer, asthma, coagulation abnormalities, hypoprothrombinemia, vitamin K deficiency, or those on anticoagulants. In rare instances, aspirin in persons allergic to salicylates may result in life-threatening allergic episodes.

MEPROBAMATE: DRUG DEPENDENCE: Physical and psychological dependence, and abuse have occurred. Chronic intoxication from prolonged ingestion of, usually, greater than recommended doses is manifested by ataxia, slurred speech, and vertigo. Therefore, carefully supervise dose and amounts prescribed and avoid prolonged use, especially in alcoholics and others with known propensity for taking excessive quantities of drugs. Sudden withdrawal after prolonged and excessive use may precipitate recurrence of preexisting symptoms, e.g. anxiety, anorexia, or insomnia, or withdrawal reactions, e.g. vomiting, ataxia, tremors, muscle twitching, confusion, states, hallucinations, and, rarely, convulsive seizures. Such seizures are more likely in persons with CNS damage or preexistent or latent convulsive disorders. Onset of withdrawal symptoms occurs usually within 12 to 48 hours after discontinuation; symptoms usually cease

within next 12- to 48-hour period. When excessive dosage has continued for weeks or months, reduce dosage gradually over 1 to 2 weeks rather than stop abruptly. Alternatively, a short-acting barbiturate may be substituted, then gradually withdrawn.

POTENTIALLY HAZARDOUS TASKS: Warn patients meprobamate may impair mental or physical abilities required for potentially hazardous tasks, e.g., driving or operating machinery.

ADDITIVE EFFECTS: Since CNS suppressant effects of meprobamate and alcohol or meprobamate and other psychotropic drugs may be additive, exercise caution with patients taking more than one of these agents simultaneously.

USAGE IN PREGNANCY AND LACTATION: An increased risk of congenital malformations associated with minor tranquilizers (meprobamate, chloralhydrate, and diazepam) during first trimester of pregnancy, has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, their use during this period should almost always be avoided. The possibility that a woman of child-bearing potential may be pregnant at time of institution of therapy should be considered. Advise patients if they become pregnant during therapy or intend to become pregnant to communicate with their physicians about desirability of discontinuing the drug.

Meprobamate passes the placental barrier. It is present both in umbilical cord blood at or near maternal plasma levels and in breast milk at concentrations in breast milk as compared to maternal plasma levels. When use of meprobamate is contemplated in breastfeeding patients, consider the drug's higher concentrations in breast milk as compared to maternal plasma levels.

USAGE IN CHILDREN: Keep preparations with aspirin out of reach of children. Equagesic-M is not recommended for patients 12 years of age and under.

PRECAUTIONS: ASPIRIN: Salicylates an-

tagonize uricosuric activity of probenecid and sulfapyrazole. Salicylates are reported to enhance hypoglycemic effect of sulfonylurea antidiabetics.

MEPROBAMATE: Use lowest effective dose, particularly in elderly and/or debilitated, to preclude over sedation. Meprobamate is metabolized in the liver and excreted by the kidney; to avoid excess accumulation exercise caution in its use in patients with compromised liver or kidney function. Meprobamate occasionally may precipitate seizures in epileptic patients. It should be prescribed cautiously and in small quantities to patients with suicidal tendencies.

ADVERSE REACTIONS: ASPIRIN: May cause epigastric discomfort, nausea, and vomiting. Hypersensitivity reactions, including urticaria, angioneurotic edema, purpura, asthma, and anaphylaxis may rarely occur. Patients receiving large doses of salicylates may develop tinnitus.

MEPROBAMATE: CNS: Drowsiness, ataxia, dizziness, slurred speech, headache, vertigo, weakness, paresthesias, impairment of visual accommodation, euphoria, overstimulation, paradoxical excitement, fast ECG activity.

GI: Nausea, vomiting, diarrhea.

CARDIOVASCULAR: Palpitation, tachycardia, various forms of arrhythmia; transient ECG changes, syncope, hypotensive crisis.

ALLERGIC OR IDIOSYNCRATIC: Milder reactions are characterized by itchy, urticarial, or erythematous maculopapular rash, generalized or confined to the groin. Other reactions include leukopenia, acute nonthrombocytopenic purpura, peptic ulcer, ecchymoses, eosinophilia, peripheral edema, adenopathy, fever, fixed drug eruption with cross-sensitivity to carisoprodol, and cross-sensitivity between meprobamate, mebutamate and meprobamate carbamate. Rare, more severe hypersensitivity reactions include hyperpyrexia, chills, angioneurotic edema, bronchospasm, oliguria, and death. Also, anaphylaxis, exfoliative dermatitis, stomatitis, and proctitis. Stevens-Johnson syndrome and

bullous dermatitis have occurred.

HEMATOLOGIC (SEE ALSO "ALLERGIC OR IDIOSYNCRATIC"): Agranulocytosis, aplastic anemia have been reported, although no causal relationship has been established, and thrombocytopenic purpura.

OTHER: Exacerbation of porphyric symptoms.

DOSAGE AND ADMINISTRATION: Usual dose is one or two tablets, 3 to 4 times daily as needed for relief of pain when tension or anxiety is present. Not recommended for patients 12 years of age and under.

OVERDOSAGE: Treatment is essentially symptomatic and supportive. Any drug remaining in the stomach should be removed. Induction of vomiting or gastric lavage may be indicated. Activated charcoal may reduce absorption of both aspirin and meprobamate. Aspirin overdosage produces usual symptoms and signs of salicylate intoxication. Observation and treatment should include management of hyperthermia, specific parenteral electrolyte therapy for ketoacidosis and dehydration, watching for evidence of hemorrhagic manifestations due to hypoprothrombinemia which, if it occurs, usually requires whole-blood transfusions. Suicidal attempts with meprobamate have resulted in drowsiness, lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Some suicidal attempts have been fatal. The following data, reported in the literature and from other sources, are not expected to correlate with each case (considering factors such as individual susceptibility and length of time from ingestion to treatment), but represent usual ranges reported. Acute simple overdose (meprobamate alone). Death has been reported with ingestion of as little as 12 gram meprobamate and survival with as much as 40 gram.

BLOOD LEVELS: 0.5-2.0 mg percent represents usual blood-level range after therapeutic doses. The level may occasionally be as high as 3.0 mg percent. A blood level of 3-10 mg percent usually corresponds to

findings of mild-to-moderate symptoms of overdosage, such as stupor or light coma.

10-20 mg percent usually corresponds to deeper coma, requiring more intensive treatment. Some fatalities occur at levels greater than 20 mg percent, more fatalities than survival can be expected.

Acute combined overdose (meprobamate with other psychotropic drugs or alcohol). Since effects can be additive, history of ingestion of a low dose of meprobamate plus any of these compounds (or of a relatively low blood or tissue level) cannot be used as a prognostic indicator.

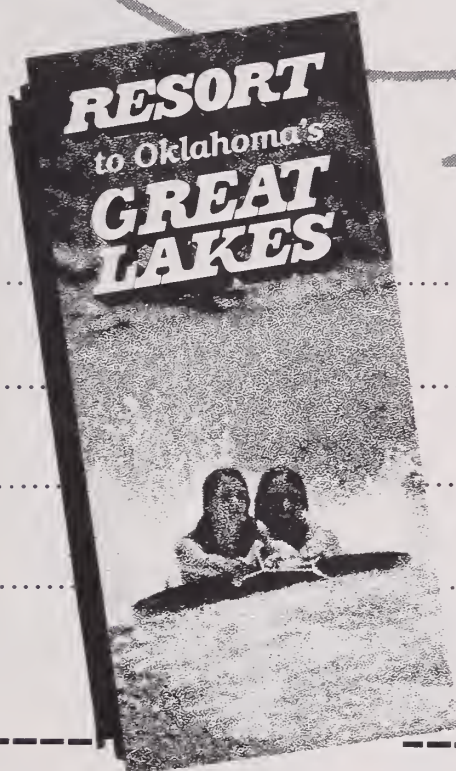
In cases of excessive doses, sleep ensues rapidly and blood pressure, pulse, and respiratory rates are reduced to basal levels. Any drug remaining in stomach should be removed and symptomatic treatment given. Should respiration or blood pressure become compromised, respiratory assistance, CNS stimulants, and pressor agents should be administered cautiously as indicated. Diuresis (osmotic (mannitol) diuresis, peritoneal dialysis, and hemodialysis have been used successfully in removing both aspirin and meprobamate. Alkalinization of the urine increases excretion of salicylates. Careful monitoring of urinary output is necessary, and caution should be taken to avoid overhydration. Relapse and death, after initial recovery, have been attributed to incomplete gastric emptying and delayed absorption.

HOW SUPPLIED: Bottles of 50 scored tablets.

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Introducing the new cancer detection procedure for women to rural areas was a challenge well met by the Oklahoma Division of the American Cancer Society when, in 1946, it converted an obsolete school bus into the nation's first cancer clinic on wheels.

Staffed by volunteer specialists—an internist, a dermatologist, a gynecologist and a surgeon—and one salaried secretary to handle the record-keeping, the recycled vehicle left Oklahoma City and headed north. Its first stop was Tonkawa,^{1,2} where advance publicity had drawn women from nearby towns, farms and reservations, all seeking the proffered examinations.

Cooperative effort

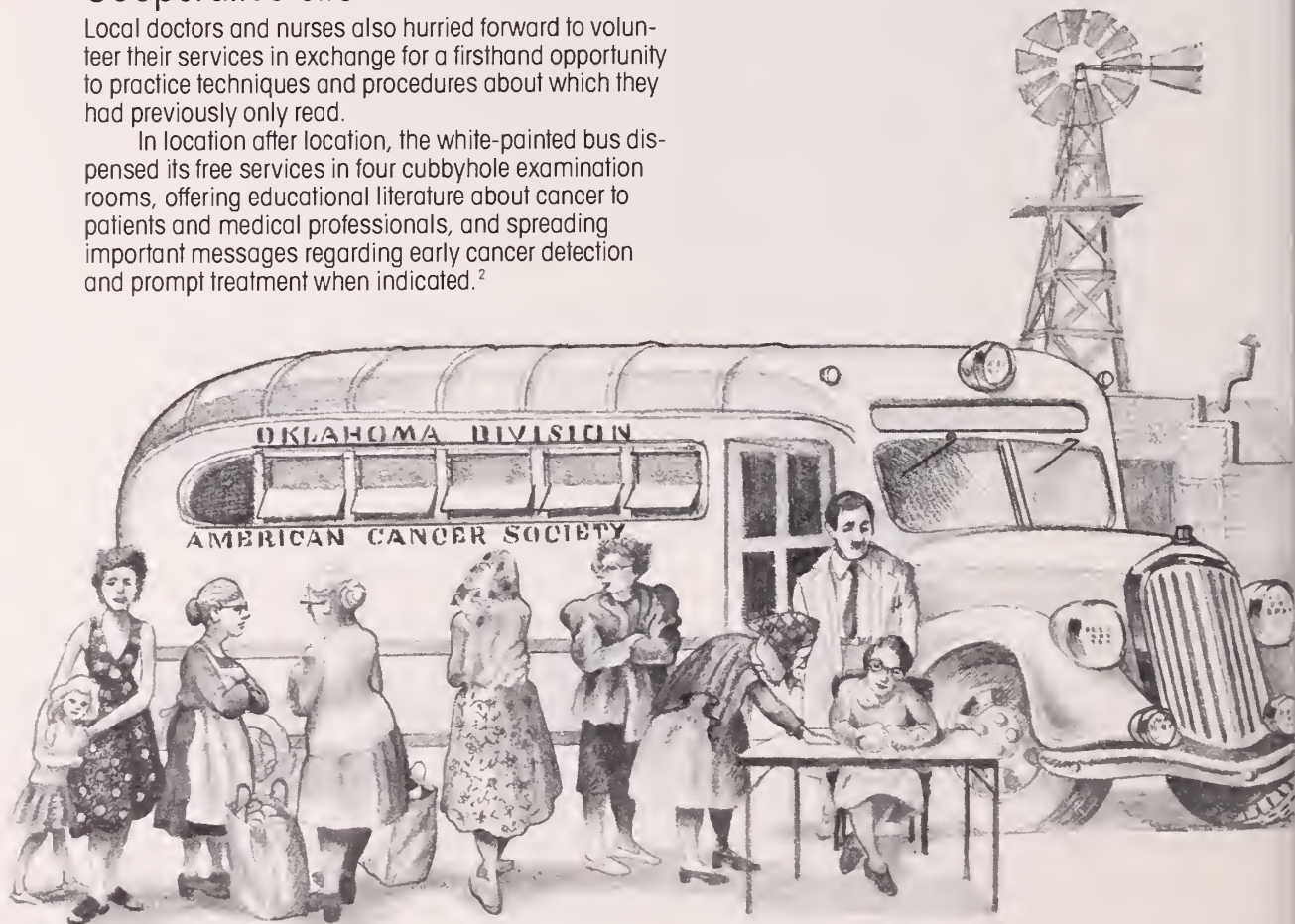
Local doctors and nurses also hurried forward to volunteer their services in exchange for a firsthand opportunity to practice techniques and procedures about which they had previously only read.

In location after location, the white-painted bus dispensed its free services in four cubbyhole examination rooms, offering educational literature about cancer to patients and medical professionals, and spreading important messages regarding early cancer detection and prompt treatment when indicated.²

The idea caught on

Today, it is not surprising to see a modern medical services vehicle on wheels in shopping-center parking areas, schoolyards or business centers. Community service organizations sponsor and support them all across the country. Unquestionably, they have come a long way in equipment and comfort from the school bus that pioneered vital health services... but *it* was the bus that made medical history.

References: 1. Kone JN. *Famous First Facts*, 3rd ed. New York, The H. W. Wilson Co., 1964, p. 367. 2. Data on file, Hoffmann-La Roche Inc., Nutley, NJ.



When the history reveals anxious depression...

For the estimated 70 percent of nonpsychotic depressed patients who are also anxious,¹ Limbitrol provides both amitriptyline, specific for symptoms of depression, and the effects of Librium® (chlordiazepoxide HCl), the tested and dependable anxiolytic. Limbitrol is, therefore, a better choice for these patients than dual agents that contain a phenothiazine, a class of antipsychotic drugs used infrequently in nonpsychotic patients.¹

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Limbitrol also has a rapid onset of action which may lead to greater patient compliance. In a multicenter study, patients taking Limbitrol experienced 62% of their overall improvement within the first week of therapy.²

In another multicenter study,³ the following symptoms associated with anxious depression were significantly reduced during the first two weeks of therapy:

- ☐ Headache—79%
- ☐ Early insomnia—91%
- Middle insomnia—87%
- Late insomnia—89%
- ☐ Gastrointestinal upset—73%

In two multicenter studies, only 1.9% of Limbitrol patients experienced cardiovascular side effects.³

Patients should be cautioned about the combined effects with alcohol or other CNS depressants and about activities requiring complete mental alertness such as operating machinery or driving a car.

References: 1. Rickels K: Drug treatment of anxiety, in *Psychopharmacology in the Practice of Medicine*, edited by Jorvik ME; New York, Appleton-Century-Crofts, 1977, p 316. 2. Feighner JP et al: *Psychopharmacology* 61: 217-229, Mar 1979. 3. Data on file, Hoffmann-La Roche Inc., Nutley, NJ

In moderate depression and anxiety

Limbitrol®^{IV}

Tablets 5-12.5 each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)

Tablets 10-25 each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt)

Please see summary of product information on following page.

LIMBITROL® TABLETS (Tranquilizer—Antidepressant)

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of moderate to severe depression associated with moderate to severe anxiety

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use, then initiate cautiously, gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction.

Warnings: Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients. (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses. Myocardial infarction and stroke reported with use of this class of drugs.) Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage, withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline, symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide).

Precautions: Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated. Sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

Adverse Reactions: Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects of both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.

The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs:

Cardiovascular: Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke.

Psychiatric: Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido.

Neurologic: Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns.

Anticholinergic: Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract.

Allergic: Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus.

Hematologic: Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia.

Gastrointestinal: Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue.

Endocrine: Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels.

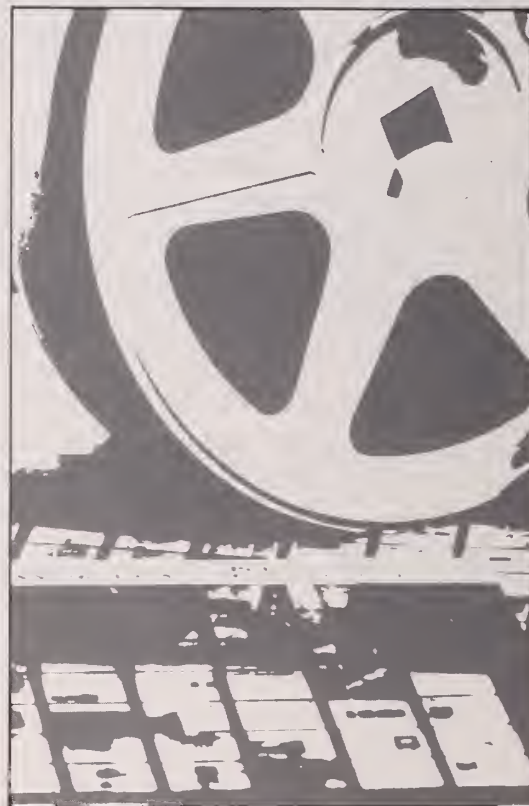
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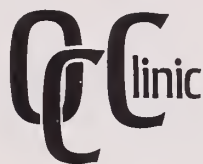
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Index to Advertisers

American Medi-Lease	xx
American Medical International, Inc.	xxxvi
The Arthritis Clinic	xxxiii
Baptist Medical Center	xvii
Boots Pharmaceuticals, Inc.	iv, v
Boyle & Company Pharmaceuticals	xiii
Burroughs-Welcome Co.	xii, xiii
The Chickasha Clinic	xxxiii
City of Faith	i
City of Tulsa	134
Country View	xxix
C. L. Frates & Co., Inc.	129
Glass-Nelson Clinic	xxxiv
Harsha Orthopedic, Inc.	xil
Eli Lilly & Co., Inc.	xix
McAlester Clinic	xxxiv
Medical Arts Laboratory	xxxv
Medical Arts Clinic of Ardmore	xxxv
Medical Legal Seminars	130
Oklahoma Allergy Clinic	xxxvi
Oklahoma Cardiovascular & Thoracic Surgery Association, Inc.	xxx
Oklahoma City Clinic	xxxii
Oklahoma Hand Surgery Center, Inc.	xxxvii
Oklahoma Plastic & Reconstructive Surgeons, Inc.	xxxviii
Oklahoma State Lodges	xxiii
Orthopedic & Arthritis Center	xxxvi
OSMA Group Life Insurance Trust	xiv
Pension Consultants	131
Pfizer, Inc.	vi, vii
Plastic & Reconstructive Surgery Clinic, Inc.	xxxvii
PLICO	IFC
Roche Laboratories	back cover, v, vi, viii, ix, x, xv, xvi, xxiv, xxv, xxvi
Shawnee Medical Center Clinic, Inc.	xxxvii
Staff Leasing, Inc.	xviii
Swanson Construction and Rentals	xxxviii
Timberlawn Psychiatric Hospital	xxix
Tulsa Adjustment Bureau, Inc.	132
The Upjohn Company	xxvii
Urological and Genitourinary Surgery	xli
Willow View Hospital	xxxii
Wilshire Garden Office Park	133
Wyeth Laboratories	xxi, xxii
	xlii

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NEWS

Members of the Oklahoma State Medical Association, the constituent societies of the association, and all readers in general are invited to supply news items of general interest to the profession.

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The American College of Chest Physicians (ACCP) will hold its 49th Annual Scientific Assembly at the Hyatt Regency Hotel-Illinois Center in Chicago, Illinois, October 23 to 27, 1983. The conference will feature in-depth reviews and discussions of the latest diagnostic and treatment procedures in cardiopulmonary medicine. Major symposia, clinical colloquia (ask-the-experts sessions), ACCP Section and Forum programs, postgraduate courses, and scientific/commercial exhibits also will be presented at the meeting. Information about the conference may be obtained from the Department of Education, American College of Chest Physicians, 911 Busse Highway, Park Ridge, Illinois 60068.

Robert J. Morgan, MD, clinical professor of dermatology at the University of Oklahoma, was presented the Clark W. Finnerud Award at the Annual Fellowship/Grant Reception of the Dermatology Foundation. The reception was held in January at the New Orleans Museum of Art during the annual meeting of the Academy of Dermatology. Dr Morgan was cited for his dedicated service to the medical profession during a career spanning 38 years. The Finnerud Award is given each year to an individual who has devoted extraordinary time and talent as a part-time teacher and clinician. Dr Morgan

serves on the board of directors of the Oklahoma County Medical Society and has been instrumental in organizing both the Oklahoma City Dermatological Society and the Oklahoma State Dermatological Association.

Mark A. Everett, MD, has been appointed to serve on the 22-member Oklahoma Humanities Committee. Dr Everett is a Regents Professor at the University of Oklahoma and is head of dermatology, interim head of the Department of Pathology, and chief of staff at Oklahoma Memorial Hospital. He will serve out the unexpired term of a Humanities Committee member who accepted a position out of state. Committee members' responsibilities include reviewing grant applications and participating in grant decisions. The Oklahoma Humanities Committee is a non-profit corporation committed to promotion of public appreciation and understanding of the humanities in Oklahoma.

Legal actions contesting exclusive contracts between physician specialists and hospitals have increased dramatically, according to the American Medical Association's Department of Health Facility Programs. While such contracts satisfy a hospital's need to ensure physician coverage for specialized services, they also have the effect of barring qualified physicians from providing services in the hospital. The courts have upheld contractual arrangements to provide the following types of service: radiology, pathology, reading EKGs, cardiac catheterization, nuclear medicine, renal dialysis, cardiac surgery, anesthesiology, emergency room care, and hospital outpatient center care. In upholding the legality of the contracts, the courts have rejected arguments that they constitute an unreasonable interference with the right of other physicians to practice their profession, that the contracts deny the patient the right to select his or her own physician, and that the hospital administration lacks the authority to enter into them. Rather, the courts have ruled that exclusive contracts promote better control and standardization of specialized procedures, increase efficiency, and improve patient monitoring. □

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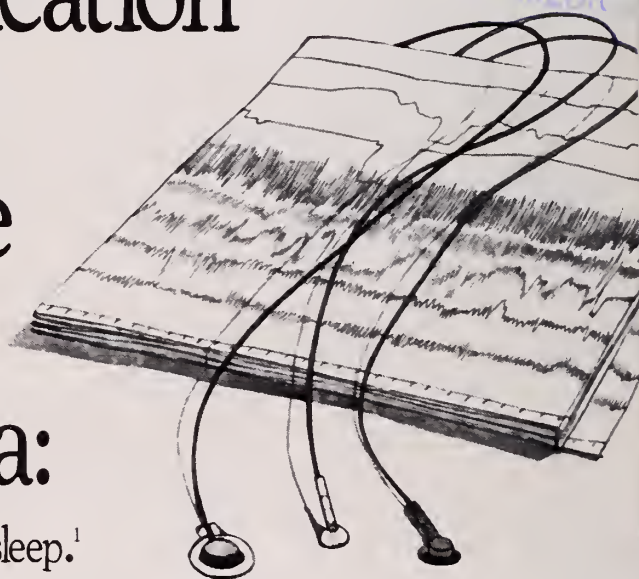
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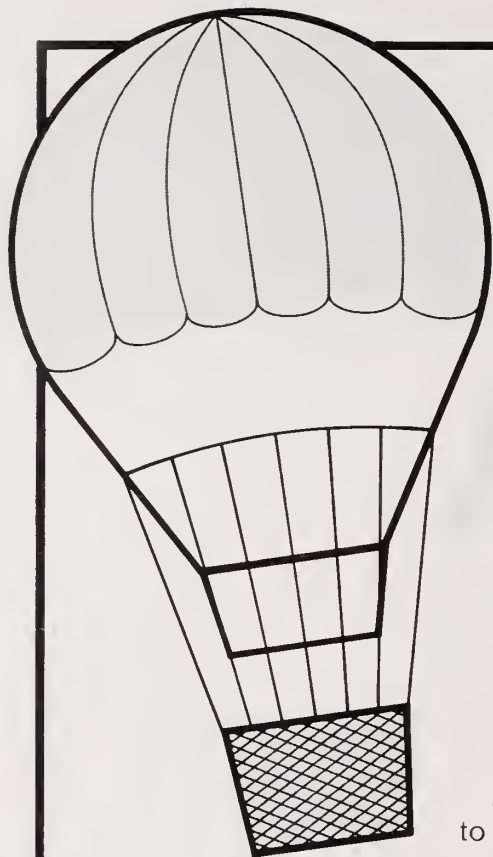
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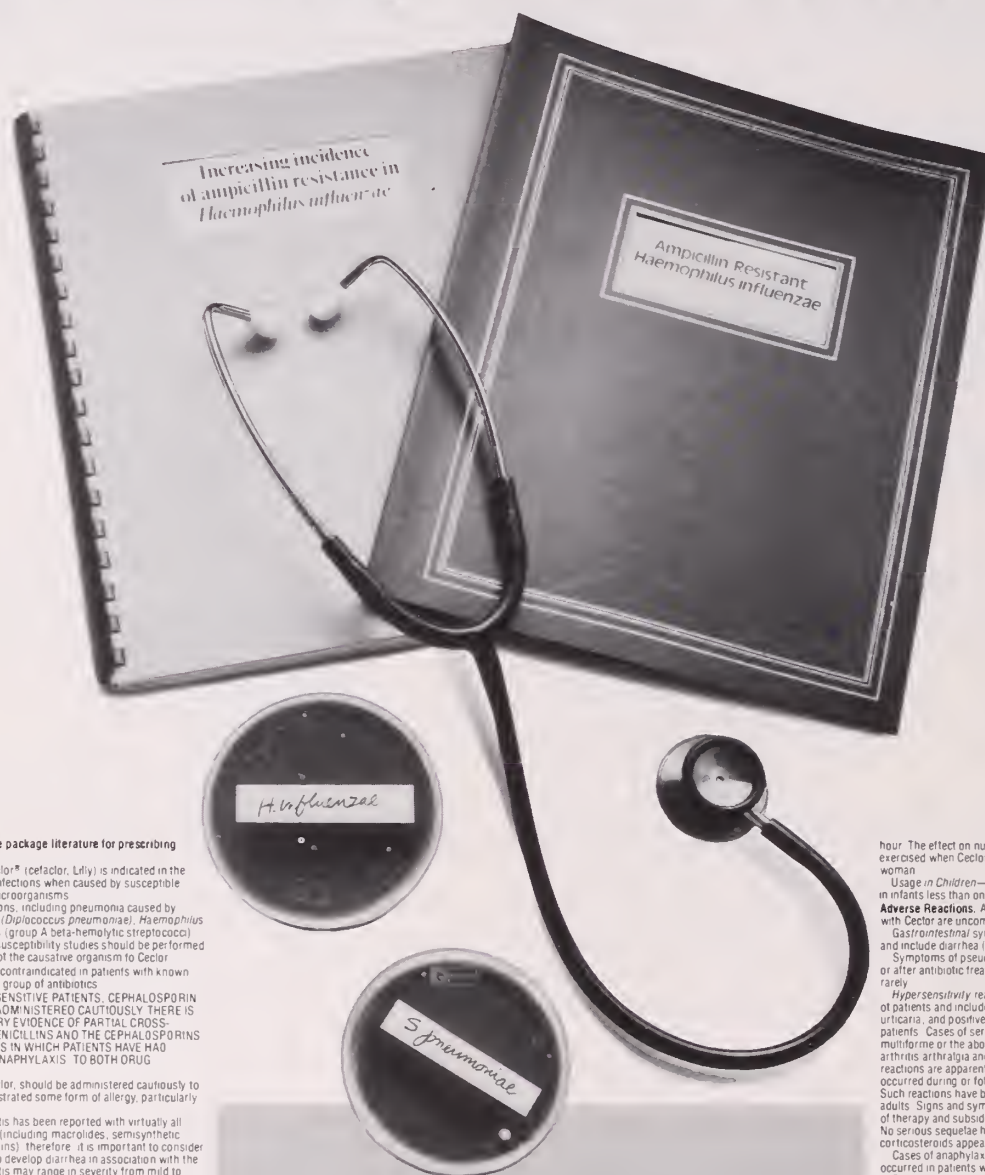
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Brief Summary Consult the package literature for prescribing information.

Indications and Usage: Cefaclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci). Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefaclor.

Contraindication: Cefaclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGICITY OF THE PENICILLINS AND THE CEPHALOSPORINS. AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefaclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins). Therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

Precautions: **General Precautions**—If an allergic reaction to Cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Cefaclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Cefaclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefaclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with ClinTest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Usage in Pregnancy—**Pregnancy Category B**—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Cefaclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response this drug should be used during pregnancy only if clearly needed.

Nursing Mothers—Small amounts of Cefaclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours, respectively. Trace amounts were detected at one

Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Cefaclor.^{1,6}

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefaclor.⁷

Cefaclor®

cefaclor

Pulvules®, 250 and 500 mg

hour. The effect on nursing infants is not known. Caution should be exercised when Cefaclor® (cefaclor, Lilly) is administered to a nursing woman.

Usage in Children—Safety and effectiveness of this product for use in infants less than one month of age have not been established.

Adverse Reactions: Adverse effects considered related to therapy with Cefaclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2-5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1-5 percent of patients and include morbilliform eruptions (1 in 100), Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis, arthralgia, and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefaclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations of SGOT, SGPT or alkaline phosphatase values (1 in 40).

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

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*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

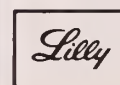
Note: Cefaclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285. Eli Lilly Industries, Inc., Carolina, Puerto Rico 00630.

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Oklahoma State Medical Association

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CONTENTS

- 137 Technology, Teaching, and Tariffs
- 138 President's Page
- 139 Dietary Intake in Rural Oklahomans, *Trudy L. Bush, PhD, MHS, Paula A. Peck, MS, RD, Betty Edge, RD and Inder J. Sharma, MS.*
- 148 Introduction to Maxillofacial Prosthetics, *Joseph R. Cain, DDS, MS.*
- 153 A Survey of Serodiagnostic Tests Used in Oklahoma Hospitals, *D. J. Flournoy, PhD, S. M. H. Qadri, PhD.*
- 156 News From The Oklahoma State Department of Health
- 159 Four Loss Prevention Seminars Set for Tulsa and OKC in July
- 159 Attorneys' Ad Not Improper State Bar Association Says
- 159 Leukemia Society Accepting Research Grant Applications
- 160 AMA Auxiliary Programs Target Child Abuse and Drunk Driving
- 161 Serious Injuries Lead Disease As Cause of Death in Indians
- 161 Number of US Women Physicians Expected to Triple by Year 2000
- 162 Deaths
- 162 In Memoriam
- 163 Massachusetts Society Offers CDC Morbidity Report at Cost
- 163 Two Oklahoma Surgeons Elected to High Office in National Society
- 164 Book Reviews
- 164 Miscellaneous Advertisements
- xxxvii Index to Advertisers
- xxxviii The Last Word

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(Cover Art by Graphic Art Center, Oklahoma City)

Roche salutes the history of Oklahoma medicine

PUTTING THE PAP TEST ON WHEELS

Introducing the new cancer detection procedure for women to rural areas was a challenge well met by the Oklahoma Division of the American Cancer Society when, in 1946, it converted an obsolete school bus into the nation's first cancer clinic on wheels.

Staffed by volunteer specialists—an internist, a dermatologist, a gynecologist and a surgeon—and one salaried secretary to handle the record-keeping, the recycled vehicle left Oklahoma City and headed north. Its first stop was Tonkawa,^{1,2} where advance publicity had drawn women from nearby towns, farms and reservations, all seeking the proffered examinations.

Cooperative effort

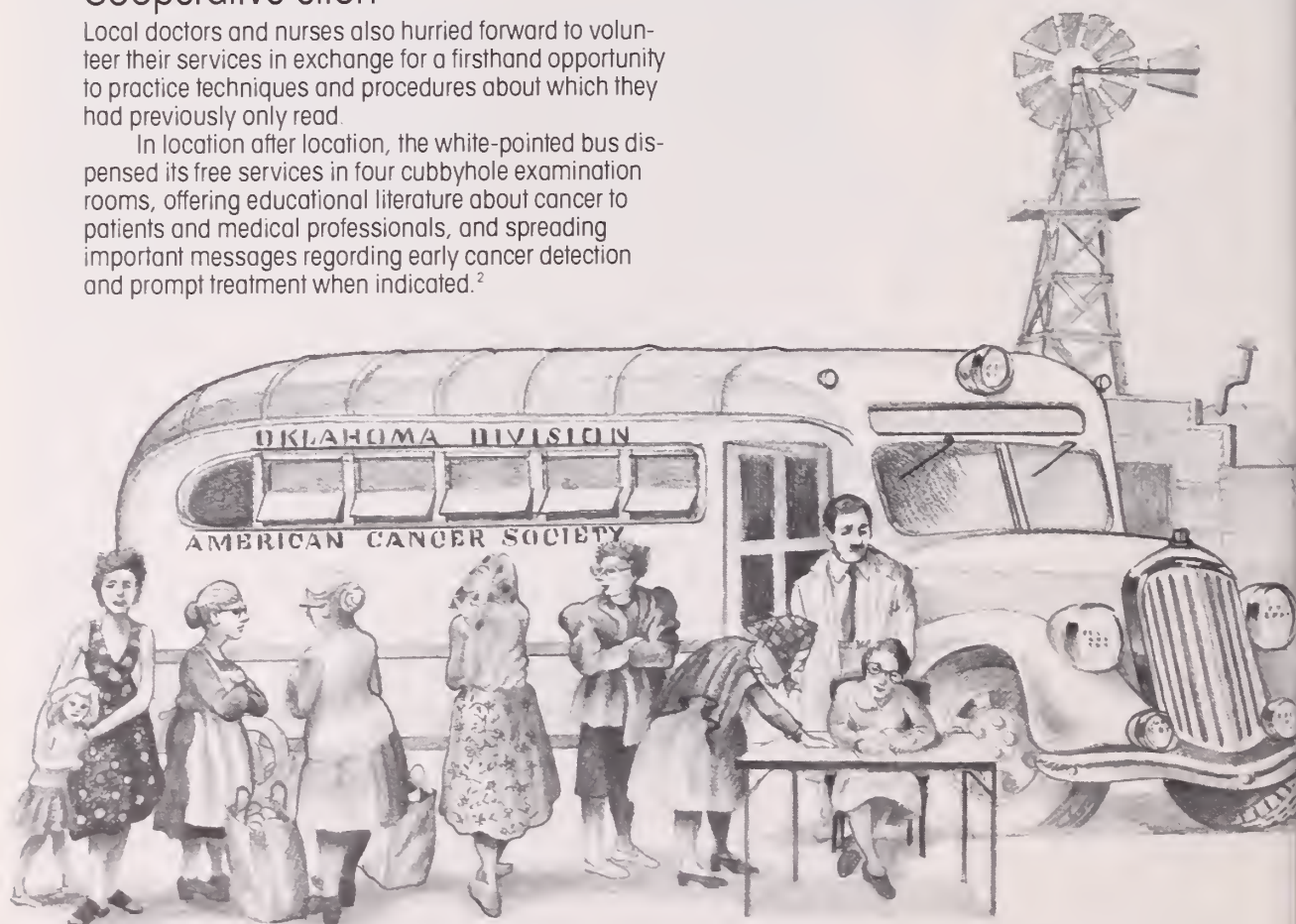
Local doctors and nurses also hurried forward to volunteer their services in exchange for a firsthand opportunity to practice techniques and procedures about which they had previously only read.

In location after location, the white-pointed bus dispensed its free services in four cubbyhole examination rooms, offering educational literature about cancer to patients and medical professionals, and spreading important messages regarding early cancer detection and prompt treatment when indicated.²

The idea caught on

Today, it is not surprising to see a modern medical services vehicle on wheels in shopping-center parking areas, schoolyards or business centers. Community service organizations sponsor and support them all across the country. Unquestionably, they have come a long way in equipment and comfort from the school bus that pioneered vital health services...but *it* was the bus that made medical history.

References: 1. Kone JN *Famous First Facts*, 3rd ed. New York, The H. W. Wilson Co., 1964, p. 367 2. Data on file, Hoffmann-La Roche Inc., Nutley, NJ



When the history reveals anxious depression...

For the estimated 70 percent of nonpsychotic depressed patients who are also anxious,¹ Limbitrol provides both amitriptyline, specific for symptoms of depression, and the effects of Librium® (chlordiazepoxide HCl), the tested and dependable anxiolytic. Limbitrol is, therefore, a better choice for these patients than dual agents that contain a phenothiazine, a class of antipsychotic drugs used infrequently in nonpsychotic patients.¹

62% of Overall Improvement...Within the First Week

Limbitrol also has a rapid onset of action which may lead to greater patient compliance. In a multicenter study, patients taking Limbitrol experienced 62% of their overall improvement within the first week of therapy.²

In another multicenter study,³ the following symptoms associated with anxious depression were significantly reduced during the first two weeks of therapy:

- ☐ Headache—79%
- ☐ Early insomnia—91%
- Middle insomnia—87%
- Late insomnia—89%
- ☐ Gastrointestinal upset—73%

In two multicenter studies, only 1.9% of Limbitrol patients experienced cardiovascular side effects.³

Patients should be cautioned about the combined effects with alcohol or other CNS depressants and about activities requiring complete mental alertness such as operating machinery or driving a car.

References: 1. Rickels K: Drug treatment of anxiety, in *Psychopharmacology in the Practice of Medicine*, edited by Jarvik ME; New York, Appleton-Century-Crofts, 1977, p. 316. 2. Feighner JP et al: *Psychopharmacology* 61: 217-229, Mar 1979. 3. Data on file, Hoffmann-La Roche Inc., Nutley, NJ.

In moderate depression and anxiety

Limbitrol®

Tablets 5-12.5 each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline
(as the hydrochloride salt)

Tablets 10-25 each containing 10 mg chlordiazepoxide and 25 mg amitriptyline
(as the hydrochloride salt)

Please see summary of product information on following page.

LIMBITROL® TABLETS® Tranquilizer—Antidepressant

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of moderate to severe depression associated with moderate to severe anxiety

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants. Do not use with monoamine oxidase (MAO) inhibitors or within 14 days following discontinuation of MAO inhibitors since hyperpyretic crises, severe convulsions and deaths have occurred with concomitant use, then initiate cautiously, gradually increasing dosage until optimal response is achieved. Contraindicated during acute recovery phase following myocardial infarction.

Warnings: Use with great care in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur in patients taking tricyclic antidepressants and anticholinergic-type drugs. Closely supervise cardiovascular patients (Arrhythmias, sinus tachycardia and prolongation of conduction time reported with use of tricyclic antidepressants, especially high doses. Myocardial infarction and stroke reported with use of this class of drugs.) Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

Since physical and psychological dependence to chlordiazepoxide have been reported rarely, use caution in administering Limbitrol to addiction-prone individuals or those who might increase dosage, withdrawal symptoms following discontinuation of either component alone have been reported (nausea, headache and malaise for amitriptyline, symptoms [including convulsions] similar to those of barbiturate withdrawal for chlordiazepoxide).

Precautions: Use with caution in patients with a history of seizures, in hyperthyroid patients or those on thyroid medication, and in patients with impaired renal or hepatic function. Because of the possibility of suicide in depressed patients, do not permit easy access to large quantities in these patients. Periodic liver function tests and blood counts are recommended during prolonged treatment. Amitriptyline component may block action of guanethidine or similar antihypertensives. Concomitant use with other psychotropic drugs has not been evaluated. Sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Limbitrol should not be taken during the nursing period. Not recommended in children under 12. In the elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects.

Adverse Reactions: Most frequently reported are those associated with either component alone: drowsiness, dry mouth, constipation, blurred vision, dizziness and bloating. Less frequently occurring reactions include vivid dreams, impotence, tremor, confusion and nasal congestion. Many depressive symptoms including anorexia, fatigue, weakness, restlessness and lethargy have been reported as side effects at both Limbitrol and amitriptyline. Granulocytopenia, jaundice and hepatic dysfunction have been observed rarely.

The following list includes adverse reactions not reported with Limbitrol but requiring consideration because they have been reported with one or both components or closely related drugs:

Cardiovascular: Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke.

Psychiatric: Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania and increased or decreased libido.

Neurologic: Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns.

Anticholinergic: Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract.

Allergic: Skin rash, urticaria, photosensitization, edema at face and tongue, pruritus.

Hematologic: Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia.

Gastrointestinal: Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue.

Endocrine: Testicular swelling and gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female and elevation and lowering of blood sugar levels.

Other: Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Overdosage: Immediately hospitalize patient suspected of having taken an overdose. Treatment is symptomatic and supportive. IV administration of 1 to 3 mg physostigmine salicylate has been reported to reverse the symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

Dosage: Individualize according to symptom severity and patient response. Reduce to smallest effective dosage when satisfactory response is obtained. Larger portion of daily dose may be taken at bedtime. Single *h.s.* dose may suffice for some patients. Lower dosages are recommended for the elderly.

Limbitrol 10-25, initial dosage of three to four tablets daily in divided doses, increased up to six tablets or decreased to two tablets daily as required. Limbitrol 5-12 5, initial dosage of three to four tablets daily in divided doses, for patients who do not tolerate higher doses.

How Supplied: White, film-coated tablets, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) and blue, film-coated tablets, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500, Tel-E-Dose® packages of 100, Prescription Paks of 50.

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See next page for brief summary of prescribing information.

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mild to moderate pain

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- Measured against a propoxyphene-acetaminophen combination for pain relief after 3rd molar extractions, ibuprofen proved equally effective and caused fewer side effects. Ibuprofen was associated with faster recovery, evidenced by more rapid reduction of trismus and return to normal function.³
- Measured against post-episiotomy pain in 30 patients, "ibuprofen was effective in treating the swelling as well as pain...during the first and worst days. Therefore, it is not only the analgesic but also the anti-inflammatory effect of ibuprofen that are the beneficial factors..."⁴



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mild to moderate pain

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• no narcotic risk, red tape, records	• narcotic precautions required
• matchless economy in a modern NSAID	

References:

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4. Taina E: Curr Med Res Opinion, 7:423-428, 1981.



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INDICATIONS AND USAGE: Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in the long-term management of these diseases. Safety and effectiveness have not been established for Functional Class IV rheumatoid arthritis.

Relief of mild to moderate pain. Treatment of primary dysmenorrhea.

CONTRAINDICATIONS: Patients hypersensitive to ibuprofen, or with the syndrome of nasal polyps, angio-edema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory drugs (see WARNINGS).

WARNINGS: Anaphylactoid reactions have occurred in patients hypersensitive to aspirin (see CONTRAINDICATIONS). Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Peptic ulceration, perforation, or gastrointestinal bleeding can be fatal; however, an association has not been established. Rufen should be given under close supervision to patients with a history of upper gastrointestinal tract disease, and only after consulting the ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be attempted. If Rufen must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

PRECAUTIONS: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If developed, discontinue Rufen and administer an ophthalmologic examination.

Fluid retention and edema have been associated with Rufen; caution should be used in patients with a history of cardiac decompensation.

Rufen can inhibit platelet aggregation and prolong bleeding time. Use with caution in patients with intrinsic coagulation defects and those taking anticoagulants.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy, this therapy should be tapered slowly when adding Rufen.

DRUG INTERACTION: Coumarin-type anticoagulants. The physician should be cautious when administering Rufen to patients on anticoagulants.

Aspirin. Concomitant use may decrease Rufen blood levels.

PREGNANCY AND NURSING MOTHERS: Rufen should not be taken during pregnancy nor by nursing mothers.

ADVERSE REACTIONS: Incidence greater than 1%. **Gastrointestinal:** The most frequent adverse reaction is gastrointestinal (4 to 16%). Includes nausea*, epigastric pain*, heartburn*, diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence). **Central Nervous System:** dizziness*, headache, nervousness. **Dermatologic:** rash* (including maculopapular type), pruritus. **Special Senses:** tinnitus. **Metabolic:** decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS). *Incidence 3% to 9%.

Incidence less than 1 in 100 Gastrointestinal: gastric or duodenal ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma. **Dermatologic:** vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome and alopecia. **Special Senses:** hearing loss, amblyopia (blurred and/or diminished vision, scotomata and/or changes in color vision) [see PRECAUTIONS]. **Hematologic:** neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs' positive), thrombocytopenia with or without purpura eosinophilia, decreases in hemoglobin and hematocrit. **Cardiovascular:** congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Allergic:** syndrome of abdominal pain, fever, chills, nausea and vomiting, anaphylaxis, bronchospasms (see CONTRAINDICATIONS). **Renal:** acute renal failure in patients with preexisting significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria. **Miscellaneous:** dry eyes and mouth, gingival ulcers, rhinitis.

Causal relationship unknown. Gastrointestinal: pancreatitis. **Central Nervous System:** paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri. **Dermatologic:** toxic epidermal necrolysis, photo-allergic skin reactions. **Special Senses:** conjunctivitis, diplopia, optic neuritis. **Hematologic:** bleeding episodes. **Allergic:** serum sickness, lupus erythematosus syndrome, Henoch-Schönlein vasculitis. **Endocrine:** gynecomastia, hypoglycemia. **Cardiovascular:** arrhythmias (sinus tachycardia, bradycardia, and palpitations). **Renal:** renal papillary necrosis.

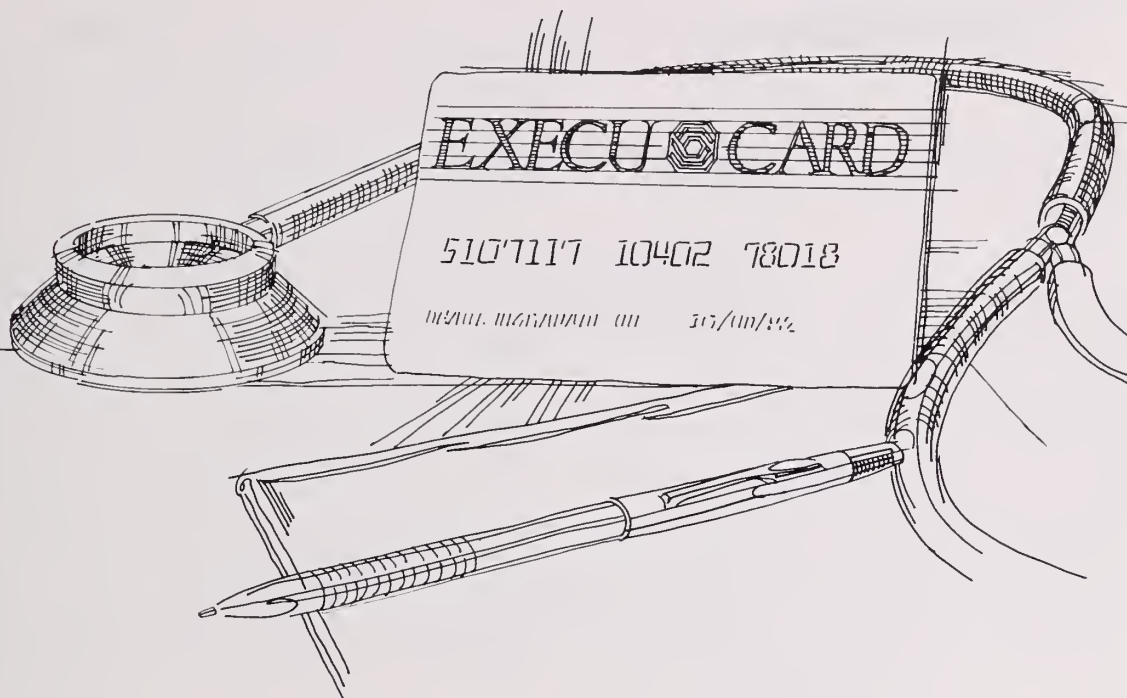
OVERDOSAGE: Acute overdosage, the stomach should be emptied. Rufen is acidic and excreted in the urine, alkaline diuresis may benefit.

DOSAGE AND ADMINISTRATION: Rheumatoid arthritis and osteoarthritis, including flareups of chronic disease: Suggested dosage 400 mg t.i.d. or q.i.d.

Dysmenorrhea: 400 mg every 4 hours as necessary.

Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for the relief of pain. Do not exceed 2,400 mg per day.

CAUTION: Federal law prohibits dispensing without prescription.



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Two hundred years ago the practice of medicine involved very little applied science and no technology whatsoever except that employed by vintners and chemists. Today, the forces of scientific and medical technology are threatening to subjugate us in a technocracy and, it appears, we are losing the struggle for dominance. If we who practice medicine lose this struggle, we will be replaced by computers and robots. Our profession will disappear. If we function as technicians, or if we view our profession as a scientific discipline and not as one of the humanities, our disappearance will be certain and our fate justified. Medical care will be replaced by medical attention.

At first glance, these facts seem unrelated to the costs of medical care. There is, however, a direct cause and effect relationship and it is essential that this relationship be recognized if our efforts to control the costs of medical care are to succeed.

Fifty years ago most students of medicine were taught by men and women whose primary commitments were to private patients. The teachers were engaged in the private practice of medicine. They maintained offices. They answered calls in the middle of the night. They wrote prescriptions. They set their fees and paid their overhead expenses. As teachers, they volunteered their time and received little or no monetary remuneration for their services. The patients they cared for in the academic clinics and hospitals were truly charity patients whose medical care was provided free of charge in exchange for their participation in the education of medical students.

In such circumstances the attending physician — the teacher — did not differentiate the desire to know and the need to know. Every diagnostic procedure that could be done without harming the patient would be done. Hospital stays of weeks, even months, were accepted too, as part of the costs of medical education, not medical care.

As new technologies developed and new medical specialties evolved, medical school faculties shifted rather abruptly from volunteer to full-time teachers who were not engaged in the private practice of medicine. More significantly, they rarely had a clear understanding of the costs generated by the orders they au-

thorized in the diagnosis and treatment of their patients.

Undergraduate medical students realized perhaps without being taught that it was easier to order a chest x-ray than to examine a patient's chest; better to order a blood sugar and an electrocardiogram than to obtain a detailed history from the patient. As technologies expanded, students learned that two x-rays and a tomographic study were much better than a simple chest x-ray; a glucose tolerance test and an exercise tolerance electrocardiographic study were far better than a single blood sugar determination and a simple resting electrocardiogram.

Tomorrow there will be newer, more sophisticated and more expensive technologies with important applications in medical practice, continuing the spiral of laudable progress. If, however, the new technology is allowed to supplant simpler, equally effective and less costly measures, to minimize the personal values in medical practice, to circumvent the exercise of judgment and discretion, it will become our master. The staggering costs of technological medical attention *now* being borne by patients and their individual resources will continue to rise, unchecked. As more of the medical school curriculum is used up in teaching the techniques of medical attention, medical students will learn less of the art and nothing of the economics of medical care.

Clearly, such inappropriate learning, whether promoted or merely permitted, can exert a disastrous effect on the costs of medical education and medical care unless steps are taken to change both the way medical students are taught and what they learn. The manner whereby a student learns to practice medicine and is taught to become a physician will determine whether a profession becomes a technocracy and whether the costs of medical care will bankrupt a nation.

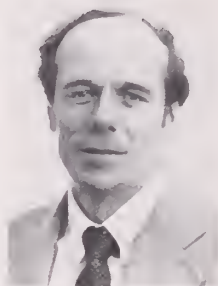
Otherwise, it's a trivial issue involving differences in educational philosophies. —MRJ

Where in the Alphabet Do I Find MD?

One of the few redeeming features of Presbyopia is that it enables its owners to more easily overlook the advancing wrinkles, aberrant hairs, and sagging contours of middle age. One of the non-redeeming features of being a middle-aged physician in Oklahoma in 1983 is the advancing plethora of abbreviations in medicine. Not only do diseases, drugs, and tests appear only by their initials, but whole organizations and philosophies come to one's attention in oft-confusing letter form.

Indeed, casually referring to the differential diagnosis of an EPO from a PPO, from an IPA has become a form of one-upmanship. The intimidating effect on the less informed listener may only add to his uneasy concern that knowledge is expanding as fast as his cerebral gray matter is contracting. Next year is 1984, but I'd rather not be reminded before my second cup of coffee, thank you.

The climate of the 1970s was such that IPAs — Independent Practice Associations, a type of HMO — did not flourish. Comprecare, an IPA in Denver, now has approximately half the number of enrollees that it had one year ago. A major revision in that organization's system of physician reimbursement may bring success in Denver's highly competitive atmosphere. However, they have certainly encountered difficulties, as have IPAs and more traditional HMOs in several locations. One of the larger HMOs in Denver suffered financial failure and is no longer operational. The Prucare HMOs in Tulsa and Oklahoma City appear solidly established, and the Tulsa organization has actually grown faster than originally projected. The traditional gatekeeper function of these HMOs'



primary care physicians and Prudential's own profit motive are certainly key characteristics of these organizations.

The new kid on the block, however, appears to be the PPO. A PPO — Preferred Provider Organization — has now been established at both St John Medical Center and St Francis Hospital in Tulsa. What is the difference in the climate of the 1980s that brings forth these new species? Among the critical elements appear to be an abundant supply (oversupply?) of physicians and hospital beds, an increased awareness of the cost of health care, active involvement of business groups, and an increasing emphasis on competition rather than regulation. Start up costs are lower and start up time is much shorter for a PPO than an HMO. Another interesting contrast exists in Denver, where the PPO Mountain Medical Affiliates operates with only five staff persons compared to 34 staff persons at the previously mentioned IPA.

Recent articles in the *Journal of the American Medical Association* and elsewhere have raised some valid questions as to the applicability of the competition model to the medical care area. Additionally, one must bear in mind that the interests of physicians and hospitals do not always run parallel in our new environment.

However, in spite of all the foregoing, I would urge that MD remain exactly where it has rightfully been in the past. MD should be found in our alphabet closely linked with quality of care, compassionate and skilled professionalism, and the very best which is implicit in the term physician. As individuals and as an organization of physicians, we need more than ever to work toward the highest ideals of the medical profession.

George H. Kamp, M.D.

Dietary Intake in Rural Oklahomans

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In this study of the dietary habits of rural Oklahomans, some common beliefs are confirmed and some unexpected findings revealed.

Patterns of nutrient intake differ by geographic region, and food habits within a given locale may be influenced by a wide variety of population and personal factors. Those factors that may determine or modify dietary intake include the age, sex, education, occupation, and marital status of individuals, as well as the agricultural resources and ethnic and sociocultural environment of the region.¹

It is important for health professionals to have some basic knowledge of regional dietary

patterns; this permits local physicians and/or dietitians to interact more effectively with their patients. It is particularly important for those health professionals who are involved in changing nutritional behavior to be aware of local food patterns, since changes can be accomplished more readily when local practices are known.

We are unaware of any systematic, population-based data on dietary intake patterns in Oklahomans. Therefore, the objective of this paper is to present a description of the dietary intake of macronutrients, determined by a 24-hour dietary recall, in a random sample of rural Oklahomans.

Subjects Selected and Screened

Study Sample. Data for this paper were gathered as part of the Oklahoma Lipid Research Clinic's (LRC) Prevalance Study of heart disease. The Oklahoma LRC was established in 1972 by the National Heart, Lung and Blood Institute as one of 12 Lipid Research Clinics in the United States and Canada. The prevalence studies, conducted in ten of the clinics, were designed to describe the distribution and relationship of lipids and lipoproteins, diet, and other factors to coronary heart disease.²

This work was supported by contract #N01 HV2-2932-L granted by The National Heart, Lung and Blood Institute of The National Institutes of Health.

The methodology and study sample of the Oklahoma LRC have been described in detail previously.^{3,4} Briefly, a multistage random sample of over 10,000 residents of Canadian, Lincoln, McClain, and Pottawatomie counties was drawn. All persons sampled were invited to participate in an initial screening examination (Visit 1), which included a brief questionnaire and a measurement of fasting levels of serum lipids. Seventy-six percent of invited residents participated in this first examination. A 15% random sample of Visit 1 participants, plus all persons found at this visit to have elevated lipid levels or who were taking lipid-lowering medications, were then invited to a second, more extensive examination (Visit 2). The Visit 2 examination included a 24-hour dietary recall, fasting (≥ 12 hours) lipid and lipoprotein determinations, resting and stress electrocardiography, anthropometric measurements, clinical chemistry determinations,

and a detailed questionnaire designed to ascertain cardiovascular symptoms and morbidity, personal habits, and medication consumption.

Persons eligible for inclusion in this report were the 382 white men and 454 white women, 20 years of age or older, who were randomly selected for the Visit 2 examination. Men ($N = 32$) and women ($N = 59$) who reported that they were on a special diet (eg, weight reduction, low cholesterol) were excluded from analysis. Also excluded were 12 men and 17 women who, in the interviewer's opinion, provided unreliable dietary information, or for whom dietary information was not available (one man and five women). These exclusions resulted in a final sample size of 337 men and 373 women.

24-hour Dietary Recall. The 24-hour dietary recall interview was conducted at the Visit 2 examination by trained and certified interviewers using a standardized protocol developed by the Lipid Research Clinics Program

D6641 (1-5)		APPENDIX One Day Dietary Recall Form		1. If Prevention Subject enter visit member. If Prevalence Subject enter RL for a recall or RD for a record (13-16)		OMB 68-S73044 68-S72041 2. Date of Visit 01/20/74 Month (17-22) Year						
3. Last Name DUE		4. Initials 1st 2nd J J (35-36)		5. Time of evening meal (day before yesterday) 6:30 PM		6. Time of arising yesterday 6:15 AM						
8. Yesterday was Sunday 1 Monday 2 Tuesday 3 Wednesday 4 Thursday 5 Friday 6 Saturday 7 (43)		9a. Are you on a special diet? No Yes 9b. Are you on any of these kinds of diets? Weight reducing? 1 2 (45) Diabetic? 1 2 (46) Bland? 1 2 (47) Fat modification? 1 2 (48) Low cholesterol? 1 2 (49) Other? 1 2* (50)		10. How many eggs do you eat a week? (Don't include eggs used in cooking) 0 4 (51-52)		11. Interviewer's opinion a. Was subject's recall: Reliable 0 Unreliable - unable to recall substantial part of intake, i.e., one or more meals? 2 Unreliable for other reasons? Specify* 3* (53)						
11b. Was the intake Typical for the subject? 0 Considerably less than usual? 2 Considerably more than usual? 3 (54)		12. Recall Interviewer Initials MMS Code Number 04 (55-56)		13. Transcriber Initials Code Number (57-58)		14. Person responsible for coding NCC (59-60) Initials LRC (61-62)						
15. Current codebook edition (63-64)		16. Date of coding Month Year (65-70)		17. Last record number used (71-73)								
*If an answer marked with an asterisk is circled please make an explanatory comment at the bottom of this page												
Key punches: For first card below punch D6641 (1-5), duplicate columns 6-16 and leave 17-39 blank, for succeeding cards duplicate 1-39												
LINE NO.	RECORD NO.	PLACE A = am P = pm Hour Min.	WAS FAT ADDED? 1 = No 2 = Yes 9 = Unknown	FOODS AND BEVERAGES	AMOUNT	COMPLETE DESCRIPTION	NHLI FOOD CODE	FREQUENCY Whole Decim	FOOD UNIT	PREP CODE	FAT CODE	DO NOT USE
010		06:30 A	1	Coffee	6 oz	1 Regular, black, 6 oz	03012060002					
020		07:30 A	1	Egg, scrambled	1.50 oz	2 Reg, made w/ 27 marg & 1 egg	25338005050					
030						Fried margarine						
040				Bread, wheat	2 oz	1 1/2 reg slice	66095020050					
050				Margarine, Fleischmann's	2 T	1 2 1/2, tub	41012020005					
060				Coffee	1/2 oz	1 Regular, black, 1/2 oz	03012100002					
070		11:00 A	1	Apple	1 oz	1 1/2 peach	81034010050					
080				Milk, 2%	4.5 oz	1 1/2-10 oz	32227095002					
090				Wheaten Crackers	~ 30	2 4 each (2 1/2" x 2 1/2")	50079020050					
100						brand unknown - 200m						
110				Coffee	3 oz	1 Regular, black, 3 oz	03012050002					
120												

and the National Heart, Lung and Blood Institute.⁵ Four of the five Oklahoma interviewers were also registered dietitians. The interview occurred on the same day that fasting blood specimens were drawn and consisted of ascertaining all foods and beverages (including alcoholic beverages) eaten and drunk in the 24 hours preceding the 12-hour fast. Portion sizes of each food consumed and specific methods of food preparation (eg, broiling, frying) also were obtained during the diet recall interview.* These dietary data were then forwarded for numerical coding to the Nutrition Coding Center of the National Heart, Lung and Blood Institute. The Nutrition Coding Center, located in Minneapolis, Minnesota, is responsible for coding all liquid intake (except water) and all food intake (including kinds of fats used in food preparation).

After coding, the information was sent to the LRC Central Patient Registry and Data Coordinating Center where total 24-hour nutrient intake was summarized and calculated for each participant. The quantified dietary components included: total calories, total protein, total fat, total carbohydrates, saturated fatty acids, monosaturated fatty acids, polyunsaturated fatty acids, cholesterol, starch, refined sugar, crude fiber, alcohol, and certain vitamins and minerals. This paper is limited to a descriptive analysis of caloric intake and percent of calories consumed from alcohol and from the macronutrients protein, fat, and carbohydrates in this population.

The validity, reliability, and generalizability of the 24-hour dietary recall as a method for evaluating dietary intake has been questioned.⁶⁻¹⁰ A major criticism is that the dietary intake of a single day may not be representative of usual intake.⁸ An additional criticism is that the recall tends to misestimate at the extremes; that is, when true intake is low, the recall overestimates, and when true intake is high, the recall underestimates.⁹

It is important to keep these considerations in mind when describing or predicting dietary intake in individuals or when trying to ascertain a dietary history. However, these criticisms do not negate the validity and usefulness of the 24-hour recall for comparing dietary intake across groups of persons, as was done in this study. In fact, there are numerous reports

TABLE 1. OPERATIONAL DEFINITIONS OF ANALYSIS VARIABLES

VARIABLE	CATEGORY	DEFINITION
SMOKING	Current smoker	Currently smoking cigarettes
	Ex-smoker, recent	Quit within last 2 years
	Ex-smoker, long term	Quit more than 2 years ago
	Nonsmoker	Never smoked (Visit 2 interview)
MARITAL STATUS	Not married	Single, widowed, separated or divorced
	Married	Currently married (Visit 1 interview)
ALCOHOL CONSUMPTION	Less than 25 grams	Quantity of alcohol consumed during previous week (Visit 2 interview)
	25 to 50 grams	
	50+ grams	
EDUCATION	Greater than high school	Education of self (Visit 1 interview)
	High school graduate	
	Some high school	
	Less than high school	
OCCUPATION	Professional & managerial	Occupation of head-of-household (Visit 1 interview)
	Clerical	
	Skilled and manual	
	Unskilled and other	
REGULAR EXERCISE	No	Regular strenuous exercise or hard physical labor (Visit 2 interview)
	Yes	
BODY MASS		wt (kg)/ht ² (m)
	Lean	< 20 for men < 19 for women
	Acceptable	20-25 for men 19-24 for women
	Overweight	26-30 for men 25-30 for women
	Obese	30+ for men or women (Visit 2 exam)
CALORIES/KILOGRAM		Total calorie intake/body weight (24-hour recall/Visit 2 exam)

that the 24-hour recall is a valuable and valid tool in describing intake in groups.¹¹⁻¹⁴

Statistical Methods. Demographic, behavioral, and anthropometric measures that may be associated with nutritional intake were ascertained from the Visit 1 or Visit 2 interview (Table 1). Occupational categories were assigned based on the single-digit occupational code of the US Census Bureau.¹⁵ The categories of body mass were determined using the sex-specific criteria suggested by Bray,¹⁶ which have been modified for weight of clothing. Two measures of alcohol consumption were used in this study, eg, alcohol intake reported during the 24-hour recall and that consumed during the week preceding the Visit 2 interview.

*A more complete description of the 24-hour dietary recall method with detailed LRC coding information can be found in Reference 5. A copy of the 24-hour recall form is presented in the Appendix.

TABLE 2. DISTRIBUTION (MEAN \pm S.D.) OF NUTRIENT INTAKE
BY AGE AND SEX
WHITE PARTICIPANTS, OKLAHOMA LRC

				PERCENT OF CALORIES FROM			
AGE	N	TOTAL CALORIES	CALORIES/ KILOGRAM	PROTEIN	FAT	CARBO- HYDRATE	ALCOHOL
MEN							
20-29	64	3675 ± 1463	48 ± 22	14 ± 3.6	40 ± 6.8	44 ± 8.8	3 ± 6.5
30-39	72	3206 ± 1130	40 ± 17	15 ± 4.6	40 ± 8.8	42 ± 10.0	2 ± 6.4
40-49	68	3045 ± 1478	38 ± 19	14 ± 3.3	43 ± 8.1	41 ± 9.5	2 ± 5.6
50-59	66	2696 ± 935	35 ± 12	16 ± 3.8	42 ± 7.9	41 ± 8.5	1 ± 2.7
60-69	46	2574 ± 786	34 ± 12	16 ± 3.4	40 ± 8.1	43 ± 8.0	2 ± 5.1
70 +	21	1761 ± 574	24 ± 10	16 ± 3.8	40 ± 8.5	44 ± 9.6	*
TOTAL	337	2986 ± 1270	38 ± 16	15 ± 3.8	41 ± 8.0	42 ± 9.1	2 ± 5.3
WOMEN							
20-29	66	2101 ± 723	33 ± 13	14 ± 3.8	40 ± 8.0	46 ± 9.4	*
30-39	73	1994 ± 807	32 ± 15	14 ± 4.6	41 ± 7.5	44 ± 9.8	1 ± 2.5
40-49	63	1644 ± 578	26 ± 11	16 ± 4.6	41 ± 7.0	42 ± 8.8	1 ± 2.5
50-59	64	1761 ± 510	27 ± 9	15 ± 4.5	40 ± 7.1	44 ± 8.7	1 ± 2.9
60-69	59	1685 ± 515	27 ± 12	15 ± 3.5	38 ± 8.8	47 ± 9.4	*
70 +	48	1502 ± 477	25 ± 10	15 ± 4.6	36 ± 6.7	49 ± 7.3	*
TOTAL	373	1801 ± 655	28 ± 12	15 ± 4.3	40 ± 7.6	45 ± 9.0	*

* Less than one percent

All statistical analyses were computed using procedures of the Statistical Analysis System (SAS).¹⁷ The differences between unadjusted means were tested for statistical significance using Duncan's Multiple Range Test. The Least Square Means Test from the General Linear Model procedure of SAS was used to test the differences between means that had been adjusted for age and body mass (Tables 3, 4, and 5).

Results

The sex- and age-specific distributions of total calories, calories per kilogram of body weight, and percent of calories from protein,

fat, carbohydrate, and alcohol (from the 24-hour recall) are presented in Table 2. In both men and women, mean caloric intake was generally lower in the older age cohorts. Mean calories per kilogram of body weight tended to follow a similar pattern.

With the exception of participants 70 years of age or older, men consumed an average of 50% to 85% more calories per day than women. When caloric intake per kilogram was compared, men still consumed 20% to 50% more calories per kilogram of weight than did women (with the exception of those men aged 70 years and older). Older men (70+ years) ate slightly more total calories than older women (1,761 vs 1,502); however, mean calories con-

TABLE 3. AGE-ADJUSTED DISTRIBUTION (MEAN \pm S.E.) OF NUTRIENT INTAKE
BY BODY MASS CATEGORIES AND SEX
WHITE PARTICIPANTS, OKLAHOMA LRC

					PERCENT OF CALORIES FROM			
	BODY MASS	N	TOTAL CALORIES	CALORIES/ KILOGRAM	PROTEIN	FAT	CARBO- HYDRATE	ALCOHOL
MEN	Lean	21	3377 ± 251	*55 ± 3.5	14 ± 0.8	40 ± 1.8	43 ± 2.0	2 ± 1.2
	Acceptable	135	2816 ± 105	*40 ± 1.4	14 ± 0.3	40 ± 0.7	43 ± 0.8	2 ± 0.5
	Overweight	150	2738 ± 101	*32 ± 1.3	16 ± 0.3	41 ± 0.7	42 ± 0.8	2 ± 0.5
	Obese	31	2912 ± 216	*28 ± 2.9	16 ± 0.7	42 ± 1.5	41 ± 1.7	1 ± 1.0
	TOTAL	337	2953 ± 51	38 ± 0.8	15 ± 0.2	41 ± 0.4	42 ± 0.5	2 ± 0.2
WOMEN	Lean	18	2039 ± 147	*43 ± 2.5	14 ± 1.0	38 ± 1.8	47 ± 2.1	**
	Acceptable	121	1847 ± 48	*32 ± 0.8	15 ± 0.3	40 ± 0.6	45 ± 0.7	**
	Overweight	174	1674 ± 57	*24 ± 1.0	15 ± 0.4	39 ± 0.7	46 ± 0.8	**
	Obese	60	1740 ± 81	*20 ± 1.3	15 ± 0.6	40 ± 1.0	44 ± 1.2	**
	TOTAL	373	1825 ± 48	29 ± 0.8	15 ± 0.2	40 ± 0.4	45 ± 0.5	**

* Each value is significantly different ($p < .05$) from each other value.

**Less than one percent

**TABLE 4. DISTRIBUTION (MEAN \pm S.E.) OF NUTRIENT INTAKE
ADJUSTED FOR AGE AND BODY MASS
BY SELECTED DEMOGRAPHIC AND BEHAVIORAL VARIABLES
WHITE MALES, OKLAHOMA LRC**

VARIABLE	VARIABLE CATEGORIES	N	TOTAL CALORIES	CALORIES/ KILOGRAMS	PERCENT OF CALORIES FROM			
					PROTEIN	FAT	CARBO- HYDRATE	ALCOHOL
SMOKING	Current Smokers	140	3153 \pm 100	40 \pm 0.3	15 \pm 0.3	41 \pm 0.7	41 \pm 0.8	3 \pm 0.4
	Ex-Smoker, Recent	16	2428 \pm 291	30 \pm 3.9	14 \pm 1.0	37 \pm 2.0	48 \pm 2.2	**
	Ex-Smoker, Long Term	88	2897 \pm 127	38 \pm 1.7	15 \pm 0.4	41 \pm 0.9	42 \pm 0.9	2 \pm 0.6
	Nonsmoker	93	2919 \pm 122	38 \pm 1.6	15 \pm 0.4	41 \pm 0.8	43 \pm 0.9	1 \pm 0.5
MARITAL STATUS	Not Married	44	3165 \pm 179	41 \pm 2.4	15 \pm 0.6	40 \pm 1.2	42 \pm 1.4	3 \pm 0.8
	Married	293	2959 \pm 69	38 \pm 0.9	15 \pm 0.2	41 \pm 0.5	42 \pm 0.5	2 \pm 0.3
ALCOHOL*	Less than 25 grams/week	224	2965 \pm 79	38 \pm 1.0	15 \pm 0.3	42 \pm 0.5	43 \pm 0.6	**
	25-50 grams/week	27	2921 \pm 227	37 \pm 3.0	14 \pm 0.7	41 \pm 1.6	44 \pm 1.7	1 \pm 0.9
	50 + grams/week	86	3059 \pm 127	40 \pm 1.7	15 \pm 0.4	39 \pm 0.9	39 \pm 1.0	7 \pm 0.5
EDUCATION	Greater than High School	128	2817 \pm 110	36 \pm 1.4	14 \pm 0.4	41 \pm 0.8	42 \pm 0.9	2 \pm 0.5
	High School Grad	120	3117 \pm 107	40 \pm 1.4	15 \pm 1.4	15 \pm 0.3	41 \pm 0.7	42 \pm 0.8
	Some High School	21	3016 \pm 256	38 \pm 3.4	14 \pm 0.8	43 \pm 1.8	42 \pm 2.0	**
	Less than High School	68	3063 \pm 163	40 \pm 2.1	15 \pm 0.5	40 \pm 1.1	42 \pm 1.3	3 \pm 0.7
OCCUPATION	Professional & Managerial	119	2829 \pm 108	36 \pm 1.4	15 \pm 0.3	41 \pm 0.7	42 \pm 0.8	2 \pm 0.5
	Clerical	69	3013 \pm 141	39 \pm 1.8	14 \pm 0.5	41 \pm 1.0	43 \pm 1.1	2 \pm 0.6
	Skilled/Manual	86	3015 \pm 127	39 \pm 1.7	15 \pm 0.4	41 \pm 0.9	42 \pm 1.0	2 \pm 0.6
	Unskilled & Others	63	3214 \pm 148	42 \pm 2.0	14 \pm 0.5	42 \pm 1.0	42 \pm 1.2	2 \pm 0.7
REGULAR EXERCISE	No	215	2914 \pm 82	37 \pm 1.1	15 \pm 0.3	41 \pm 0.6	42 \pm 0.6	2 \pm 0.4
	Yes	102	3221 \pm 120	42 \pm 1.6	15 \pm 0.4	41 \pm 0.8	42 \pm 0.9	2 \pm 0.5

* The variable Alcohol measured in grams/week was ascertained in the Visit 2 interview and is different from the category "Percent of calories from alcohol" which was determined during the 24-hour dietary recall.

** Less than one percent

sumed per kilogram by older men was similar to those consumed by older women (24 vs 25).

There were no consistent patterns by age in percentage of calories consumed from protein, fat, or carbohydrate. However, in this study middle-aged men (40 to 59 years) consumed a slightly greater percentage of their calories from fat (43%) than did the older and younger men (40%) and a lesser percentage of their calories from carbohydrate (41% vs 43%). In men, the percent of calories from alcohol tended to be lower in the older age groups.

Middle-aged women (40 to 59 years) consumed a significantly ($p < .05$) higher percentage of calories from protein (16%) than the older and younger women (14%). In women 20 to 59 years, the percentage of calories consumed from fat was relatively constant ($\sim 41\%$), while women in the oldest age groups (68+ years) consumed significantly ($p < .05$) less fat (37% vs 41%) and significantly ($p < .05$) more carbohydrate (48% vs 44%) than women less than 60 years of age.

The age-adjusted distribution of nutrient intake by sex and body mass categories is presented in Table 3. Men who were classified as

overweight and women who were classified as overweight and obese reported consuming fewer total calories than lean or acceptable-weight persons. When calories per kilogram of body weight were examined, lean men and women reported consuming significantly ($p < .01$) more calories per kilogram than persons in any other body mass category. Even persons with an acceptable body mass reported eating significantly ($p < .001$) more calories per kilogram than those who were overweight or obese. Lean men and women reported consuming over twice as many calories per kilogram of body weight as obese men and women. No significant difference was observed in percent of calories consumed from protein, fat, carbohydrate, or alcohol by body mass categories for either men or women. Because of the profound association of body mass with caloric intake, all further results are statistically adjusted for body mass as well as age.

The age- and body-mass-adjusted distribution of macronutrient consumption by selected demographic and behavioral variables is shown in Tables 4 (men) and 5 (women). In men, current smokers consumed significantly

($p < .02$ more calories and more calories per kilogram than recent ex-smokers. Current smokers also consumed more ($p < .06$ of their calories from alcohol than did nonsmokers. Recent ex-smokers consumed fewer calories from fat ($p < .07$) than current smokers and significantly more from carbohydrate ($p < .03$) than other men. No other significant difference was observed in nutrient intake by smoking status.

There were no significant differences for men in either total calories or calories per kilogram by amount of alcohol consumed during the previous week. However, men who reported drinking 50 grams or more per week consumed significantly fewer calories from fat ($p < .03$) and carbohydrate ($p < .01$) than men drinking less than 50 grams per week. Men who reported a weekly consumption of alcohol of more than 50 grams also reported a significantly higher ($p < .01$) percentage of calories from alcohol during the 24-hour recall.

Men who had formal education past high school consumed significantly fewer ($p < .05$) total calories and calories per kilogram than men with a high school education or less. Likewise, men in the highest occupational category consumed fewer ($p < .09$) total calories

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and calories per kilogram ($p < .05$) than men in the lowest occupational group. No significant differences were observed in other patterns of nutrient intake by either education or occupational status.

Men who reported doing regular exercise or heavy labor consumed significantly more ($p < .03$) total calories and calories per kilogram ($p < .01$) than more sedentary men.

No significant differences in caloric intake or percent of calories consumed from protein, fat, or carbohydrate were seen by smoking category in women (Table 5). However, non-

An unexpected finding in men was that current smokers consumed significantly more total calories and calories per kilogram than recent ex-smokers.

smokers consumed significantly fewer ($p < .01$) calories from alcohol than either current or long-term ex-smokers.

Weekly alcohol consumption was statistically unrelated to caloric or nutrient intake in women, with one exception. Women who reported drinking 50 grams of alcohol or more during the previous week also reported consuming significantly ($p < .01$) more calories from alcohol during the 24-hour recall.

Women with less than a high school education tended to consume fewer ($p < .1$) total calories and fewer ($p < .1$) calories per kilogram than women with more education. Women with more than a high school education consumed a significantly lower percentage of their calories as fat ($p < .05$) than women with less education.

Unless mentioned above, no significant differences were observed for men or women between nutrient intake and the other selected variables.

Findings Expected and Unexpected

The consistently downward trend in caloric intake seen at successively older ages in both men and women was not unexpected and is consistent with reports of decreased nutrient intake seen with increasing age.¹⁸⁻²⁰

The sex differential in total caloric intake was also as expected, with men on the average

TABLE 5. DISTRIBUTION (MEAN \pm S.E.) OF NUTRIENT INTAKE
ADJUSTED FOR AGE AND BODY MASS
BY SELECTED DEMOGRAPHIC AND BEHAVIORAL VARIABLES
WHITE FEMALES, OKLAHOMA LRC

VARIABLE	VARIABLE CATEGORIES	N	TOTAL CALORIES	CALORIES/KILOGRAMS	PERCENT OF CALORIES FROM			
					PROTEIN	FAT	CARBO-HYDRATE	ALCOHOL
SMOKING	Current Smokers	107	1778 \pm 63	28 \pm 1.1	15 \pm 0.4	40 \pm 0.8	44 \pm 0.9	1 \pm 0.2
	Ex-Smoker, Recent	7	1655 \pm 241	27 \pm 4.1	15 \pm 1.7	37 \pm 2.9	48 \pm 3.5	**
	Ex-Smoker, Long Term	27	1955 \pm 122	31 \pm 2.0	16 \pm 0.8	38 \pm 1.5	45 \pm 1.8	1 \pm 0.4
	Nonsmoker	231	1800 \pm 42	28 \pm 0.7	15 \pm 0.3	40 \pm 0.5	45 \pm 0.6	**
MARITAL STATUS	Not Married	111	1778 \pm 64	28 \pm 1.1	15 \pm 0.4	38 \pm 0.8	46 \pm 0.9	**
	Married	262	1811 \pm 40	28 \pm 0.7	15 \pm 0.3	40 \pm 0.5	44 \pm 0.6	**
ALCOHOL*	Less than 25 grams/week	344	1800 \pm 34	28 \pm 0.6	15 \pm 0.2	40 \pm 0.4	45 \pm 0.5	**
	25-50 grams/week	14	1726 \pm 170	26 \pm 2.8	17 \pm 1.2	38 \pm 2.0	44 \pm 2.5	1 \pm 0.5
	50 + grams/week	15	1916 \pm 164	30 \pm 2.8	15 \pm 1.1	37 \pm 2.0	41 \pm 2.4	7 \pm 0.5
EDUCATION	Greater than High School	74	1849 \pm 73	29 \pm 1.2	15 \pm 0.5	38 \pm 0.9	46 \pm 1.1	1 \pm 0.3
	High School Grad	169	1846 \pm 50	29 \pm 0.8	15 \pm 0.3	40 \pm 0.6	44 \pm 0.7	**
	Some High School	49	1811 \pm 90	28 \pm 1.5	14 \pm 0.6	40 \pm 1.1	45 \pm 1.3	**
	Less than High School	81	1658 \pm 90	26 \pm 1.3	14 \pm 0.5	40 \pm 0.9	46 \pm 1.1	**
OCCUPATION	Professional & Managerial	86	1855 \pm 68	29 \pm 1.1	15 \pm 0.5	39 \pm 0.8	45 \pm 1.0	1 \pm 0.2
	Clerical	71	1813 \pm 75	28 \pm 1.3	15 \pm 0.5	40 \pm 0.9	45 \pm 1.1	**
	Skilled/Manual	99	1785 \pm 65	28 \pm 1.1	15 \pm 0.4	40 \pm 0.8	45 \pm 1.0	**
	Unskilled & Others	117	1769 \pm 59	28 \pm 1.0	14 \pm 0.4	40 \pm 0.7	45 \pm 0.9	**
REGULAR EXERCISE	No	308	1801 \pm 36	28 \pm 0.6	15 \pm 0.2	40 \pm 0.4	45 \pm 0.5	**
	Yes	35	1927 \pm 107	30 \pm 1.8	15 \pm 0.7	40 \pm 1.3	45 \pm 1.6	**

* The variable Alcohol measured in grams/week was ascertained in the Visit 2 interview and is different from the category "Percent of calories from alcohol" which was determined during the 24-hour dietary recall.

** Less than one percent

consuming about 1,200 calories per day more than women. Body size differences between men and women undoubtedly accounted for some of the increased caloric intake in men. However, even when body size was considered, men still consumed about 30% more calories per kilogram of body weight than women. There are several possible explanations for these results. First, men have more muscle mass and less adipose tissue than women; therefore, even at the same weight, there is a greater caloric requirement, since muscle tissue requires more calories than adipose tissue.¹⁹ Second, men have intrinsically higher metabolic rates than women, irrespective of body composition, and thus require more calories.^{19,20}

The finding that overweight men and overweight and obese women consumed fewer total calories and fewer calories per kilogram of body weight than persons with a lean or acceptable body mass is intriguing and has been reported in several other studies.²¹⁻²³ One explanation for this finding is that heavier men and women, because of the stigma associated with obesity, may tend to underreport their caloric consumption to a greater degree than

persons of more normal weight.²⁴ Obese individuals also may be more likely than normal weight persons to eat in an unconscious manner and therefore may truly be unaware of their total intake.

However, in our study even persons with an acceptable body mass reported consuming significantly fewer total calories and significantly fewer calories per kilogram than lean individuals. It is unlikely that persons of an acceptable body mass, who would not feel stigmatized for consuming more calories and who may be less likely to eat in an unconscious manner, would significantly underreport their food consumption. Therefore, it is quite probable that the overweight and obese men and women in this study actually did consume less food than those with a lean or acceptable body mass. This view is consistent with studies that report decreased caloric consumption in obese individuals^{21,22} and reports of decreased basal metabolism in overweight persons.²⁵⁻²⁷

An unexpected finding in men was that current smokers consumed significantly more total calories and calories per kilogram than recent ex-smokers. This finding seems at odds with the popular belief that ex-smokers tend to

eat more after smoking cessation. Only a few men were recent ex-smokers ($N=16$), however, and this may have influenced the results. However, even "long-term" ex-smokers consumed fewer total calories and calories per kilogram than both nonsmokers and current smokers.

It is also interesting to note that recent ex-smokers consumed significantly fewer calories from alcohol than other men. One explanation for this finding is that recent ex-smokers may have quit smoking because they were sick and, therefore, also ate less and drank less alcohol. Women exhibited a pattern similar to that seen in men, ie, recent ex-smokers consumed fewer total calories and fewer calories per kilogram than current smokers. However, female long-term ex-smokers did appear to eat more and also drink more alcohol than nonsmokers.

Men with a higher social status, ie, with more than a high school education and/or in a business or profession, consumed fewer calories than other men. This may reflect the reduced physical demands of white-collar positions. Another explanation is that middle- and upper-class men may eat different kinds of foods than men in other social positions. However, there was no difference in the distribution of macronutrients by education or occupation, suggesting that the upper-stratum men ate less food rather than different kinds of food.

Lean men and women reported consuming over twice as many calories per kilogram of body weight as obese men and women.

In women, a different pattern was observed: those with the lowest educational attainment (less than high school) ate fewer calories than those with more schooling. This result was unexpected and is contrary to the common belief that women who are highly educated tend to be more calorie conscious. The occupation of the head-of-household was unrelated to caloric intake in women, suggesting that economic considerations are probably not a factor here.

Overall, in men and women there was little association between percent of calories consumed from protein, fat, carbohydrate, or alcohol and any of the demographic or behavioral factors. An exception was that men 40 to 59 years of age consumed significantly more calories from fat than men at other ages. Although the absolute difference is small (43% vs 40%), men at these ages are at risk for prema-

In both men and women, mean calorie intake was generally lower in the older age cohorts.

ture coronary heart disease. Therefore, such an increase in fat intake might contribute to the development or enhancement of the atherogenic process. Indeed, it is remarkable that the patterns of macronutrient intake were so similar among the categories of sociodemographic variables. This similarity was evident in both men and women.

It is difficult to compare the "Oklahoma diet" with other regional diets, since there have been relatively few studies examining nutrient intake in free-living adult populations. Two studies in other regions, which also utilized a 24-hour recall, are the Multiple Risk Factor Intervention Trial (MRFIT), a multicenter study, and the Framingham Study in Massachusetts. Men 35 to 47 years in MRFIT²⁸ reported consuming fewer total calories (2,497 vs 2,938), more calories from alcohol (7% vs 1%), and fewer calories from fat and carbohydrate than the Oklahoma LRC men. In the Framingham Study,²⁹ men 45 to 65 years of age reported consuming fewer total calories (2,643 vs 2,738) and fewer calories from fat (39% vs 43%) than rural Oklahomans of the same age.

These differences in dietary patterns may reflect differences in the quantity and quality of intake in rural and nonrural areas, or they may reflect other social and cultural differences. The caloric intake of participants in the Oklahoma LRC study was compared with that reported in a representative sample of the entire US population (HANES I).³⁰ The methods for ascertaining dietary intake were comparable in the two studies, and the mean body weight of Oklahomans did not differ from

that reported for HANES participants. Nonetheless, Oklahoma men and women consumed significantly ($p < .02$) more calories than the US sample at every age. The reason for this increased caloric intake in Oklahomans is unclear, but certainly the rural lifestyle, the popularity of fried foods, and the abundance of beef in Oklahoma may contribute to higher caloric intakes.

According to data published by the US government,³¹ the proportions of macronutrients currently consumed by Americans are 12% protein, 42% fat, and 46% carbohydrate. In comparison, the proportions of macronutrients consumed by Oklahomans are 15% protein, 41% fat, and 44% carbohydrate. It appears that Oklahomans, as well as other Americans, will have to change their eating patterns dramatically to comply with the US recommended dietary goals that suggest 12% protein, 30% fat, and 58% carbohydrate.³²

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Introduction to Maxillofacial Prosthetics

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Maxillofacial prosthetics can provide intraoral or extraoral prostheses that will provide rehabilitation for the patient who is not a candidate for surgical reconstruction.

Maxillofacial prosthetics is the art and science of anatomic, functional, or cosmetic reconstruction using nonliving substitutes to replace regions in the mandible, maxilla, and face that are missing or defective as a result of surgical treatment, trauma, pathology, or developmental or congenital malformation.

The routine patient population presents three basic types of need:

1. developmental defects such as prognathia and retrognathia
2. acquired defects due to trauma or surgical treatment for malignancy
3. congenital defects such as cleft lip and palate or anophthalmia.

Maxillofacial prosthetics can be used successfully to rehabilitate the patient who is not

a candidate for surgical reconstruction. Some clinical situations in which a surgical approach is not the treatment of choice are: poor general health, loss of anatomic parts not replaceable with the patient's own tissue, compromised blood supply due to radiation therapy, and desire to delay surgical reconstruction to observe the surgical site of an excised malignancy.

The prostheses may be either extraoral or intraoral. Extraoral prostheses are made from materials that are nonirritating to the skin, reproduce the missing tissues in a lifelike manner, and can be retained in the anatomic defect. The most commonly used materials for extraoral prostheses include silicones, acrylic resins, and vinyl polymers. Examples of extraoral prostheses are:

1. a nasal prosthesis replacing part or all of the nose (Figs 1 and 2)
2. an auricular prosthesis replacing part or all of the ear (Figs 3 and 4)
3. an ocular prosthesis replacing the eye globe only (Figs 5 and 6)
4. an orbital prosthesis replacing the eye and associated structures (Figs 7 and 8)
5. a composite prosthesis replacing more than one facial part, eg, eye and nose (Figs 9 and 10).

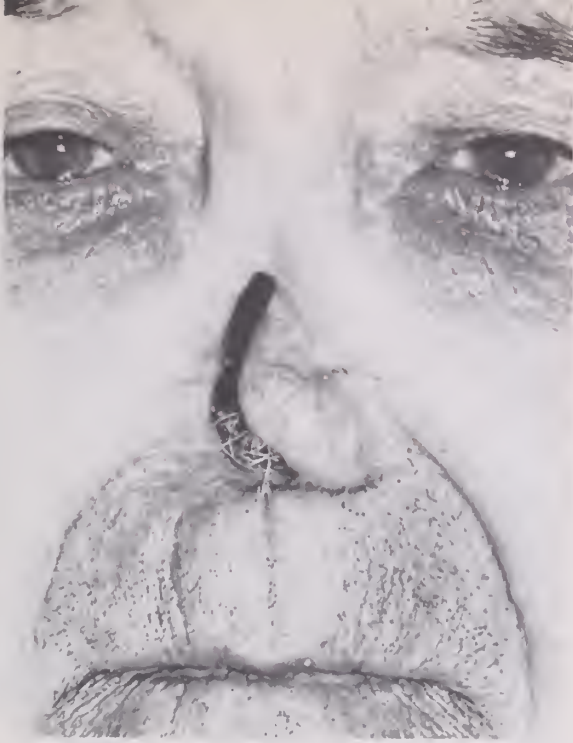


Fig 1 A surgical resection for cancer left this defect.

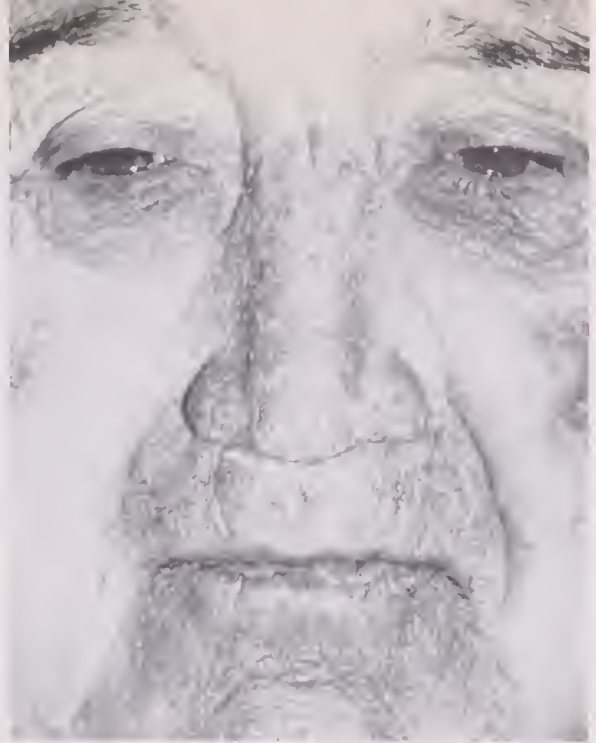


Fig 2 Nasal prosthesis.



Fig 3 Arterial venous obstruction necessitated surgical resection.



Fig 4 Auricular prosthesis.

Fig 5 Trauma from a pellet resulted in this ocular injury.

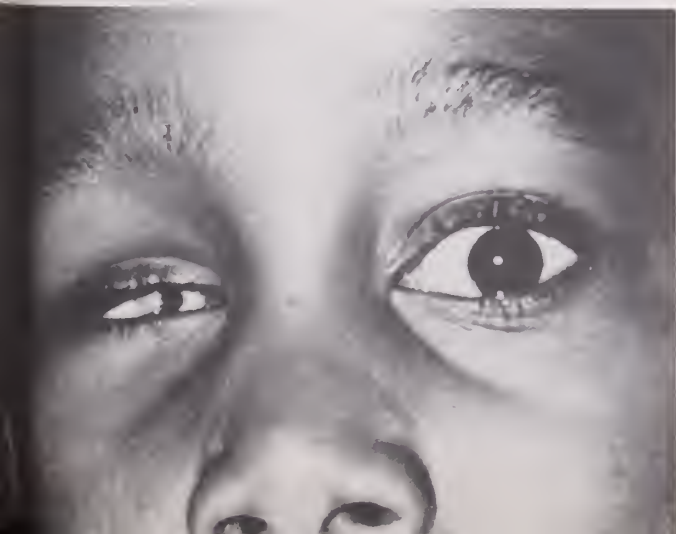


Fig 6 Ocular prosthesis.





Fig 7 A malignant melanoma required this orbital exenteration.



Fig 8 Orbital prosthesis.



Fig 9 Many extensive surgical procedures were required to cure this patient's cancer.



Fig 10 Composite facial prosthesis.



Fig 11 A left maxillectomy.

Intraoral prostheses are usually made from acrylic resin and cast chrome alloys. Examples of intraoral prostheses are:

1. surgical obturators that are used temporarily for prosthetic reconstruction of the maxilla at the time of surgery
2. postsurgical obturators that serve as long-term prostheses placed after maxillary surgery (Figs 11 and 12)
3. mandibular flange prostheses that help to guide the mandible into occlusion after a section of it has been removed
4. feeding appliances to aid cleft-palate infants in taking nutrition
5. speech-aid prostheses that correct velopharyngeal incompetency
6. palatal orthopedic expansion appliances that align the maxillary segments of a cleft palate.

Fig 13 A complex mandibular implant in place.

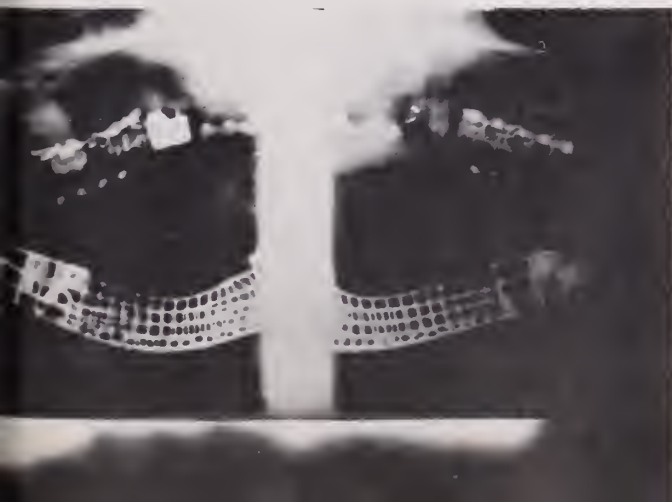


Fig 12 Maxillary obturator in place.

Prosthetic Implants

Maxillofacial prosthetic implants in the face, cranium, or mandible are nonliving substitutes used to rebuild defects of the head and jaw. They are placed completely within the remaining tissues and contribute to the improved form and function of those tissues. Examples of maxillofacial implants are:

1. simple implants used to augment the contours in a single area such as the cranium or malar eminence
2. complex implants used to rejoin two portions of a structure such as segments of a mandible (Fig 13)
3. dental implants used to replace missing teeth or support a removable denture (Fig 14)

The scope of maxillofacial prosthetics is not limited to reconstruction; it also may include treatment appliances used in conjunction with other modes of treatment, such as:

Fig 14 A dental implant utilized to stabilize a denture.





Fig 15 A surgical splint utilized in midface or mandibular fractures.



Fig 16 Electric cord burn to oral commissure.



Fig 17 Oral stent in place to prevent microstomia secondary to scar contracture.

1. splints used to hold portions of a dental arch in a specific relationship to one another (Fig 15)
2. surgical stents used to maintain tissue in position during healing
3. radiation carriers used to hold a radioactive source in a specific relation to tissue
4. radiation shields used to protect normal tissue from exposure during radiation therapy of malignant disease
5. burn-compression stents that reduce scar contracture under the Jobst elastic bandages
6. antimicrostomia stents that reduce the scar contracture of electric burns of the oral commissure (Figs 16 and 17).

Patients requiring the services of a maxillofacial prosthodontist generally have multiple medical needs. Comprehensive management of these needs requires the cooperative efforts and skills of a medical and paramedical team. This team includes surgeons, radiotherapists, dentists, speech therapists, psychologists, social workers, and other professionals who may be able to provide treatment for the patient's special needs.

Significant advancements have been made recently in the materials, techniques, and skills used in rehabilitating patients with head and neck defects. These advancements have been matched by improvements in surgery and radiotherapy for cases involving congenital defects, trauma, and malignant disease.

This cooperative team approach by health professionals has the potential to extend the scope of patient care beyond that of immediate needs into the realm of rehabilitation so the patient may have a useful and productive life within our society.

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A Survey of Serodiagnostic Tests Used in Oklahoma Hospitals

D. J. FLOURNOY, PhD
S. M. H. QADRI, PhD

In 1982 a survey was conducted to ascertain the status of clinical serology/immunology in Oklahoma hospitals. This article outlines the results of that survey.

At the time of the survey there were no in-depth published reports on the overall status of clinical serology/immunology in Oklahoma hospitals. To better understand the future needs of laboratory technologists who perform serodiagnostic tests and to provide a baseline for future studies, a one-page questionnaire was mailed on July 20, 1982, to 144 hospitals throughout Oklahoma for the purpose of collecting relevant data. Questions concerned hospital type and bed capacity, type of patients, number of employees in serology, number and range of tests performed, test kit manufacturers, reference laboratories used, and referrals. One month was allowed for re-

turn of the surveys; data then were compiled manually.

Hospitals Respond to Survey

Of 144 questionnaires sent out, 75 (52%) were returned within one month. Services offered by the respondent hospitals were: surgical (68%), medical (93%), outpatient (34%), and psychiatric (19%). Patients served were: adult males (92% of hospitals), adult females (97%), and children (19%). At least some serological tests were performed in 92% of the respondent hospitals. The procedures most commonly available were those for infectious mononucleosis, rheumatoid factor, and syphilis

The procedures most commonly available were those for infectious mononucleosis, rheumatoid factor, and syphilis (screen). . . .

(screen); the most commonly used reference laboratory was Medical Arts Laboratory of Oklahoma City, which served 26 of 50 laboratories.

Table 1 notes the number of serologists working in hospitals of varying size. Most hos-

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Table 1. Number of Serologists in Various Size Hospitals

Hospital Bed Capacity	# Hospitals	Full-time		Part-time	
		Mean	Range	Mean	Range
1 - 50	30	0	0-2	1	0-1
51 - 100	16	0	0-1	0	0-2
101 - 200	15	1	0-2	0	0-2
201 - 300	2	1	0-3	0	0-3
301 - 400	5	2	0-3	0	0-2
401 - 500	2	1	1	0	0
601 - 700	4	3	0-5	1	0-2
901 - 1000	1	3	3	3	3

Table 2. Occurrence of Common Serodiagnostic Tests

Test/Disease	% of Respondents Performing Test	# Tests/Day Mean Range
ANA	27	0-5
ASO qual.	57	0-5
ASO quant.	36	0-5
Cold. agglut.	58	0-5
C-reactive protein	41	0-5
Febrile agglut.	70	0-5
Fungal agglut.	15	0-5
Hepatitis B	36	0-5
Mononucleosis qual.	91	0-5
Rheumatoid factor qual.	80	0-5
Rubella	19	0-5
Syphilis, confirm	27	0-5
Syphilis, screen	80	6-10
Viral agglut.	4	0-5

ANA (antinuclear antibodies), ASO (antistreptolysin O), qual. (qualitative), quant. (quantitative), agglut. (agglutinins).

pitals with fewer than 100 beds had zero to one serologists, full- or part-time. The occurrence of common serodiagnostic tests is shown in Table 2. Many laboratories received less than one specimen per day for most of the tests offered, and more syphilis (screen) tests were ordered daily than any other test. The prevalence of particular test kits is indicated in Table 3.

Tests such as anti-DNA, antimitochondrial antibodies, antithyroid antibodies, extractable nuclear antigens, and TORCH titers were done by less than 14% of the respondents. Anti-DNA tests were the most common of this group.

Similar Results Nationwide

The College of American Pathologists (CAP) sends a comprehensive serology survey to hospitals throughout the United States four times

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Table 3. Prevalence of Particular Tests Used

Test/Disease	Most Common Method/Manufacturer	%	Second Most Common Method/Manufacturer	%
Antinuclear antibodies ^b	/Virgo	33	—	—
ASO qualitative	Streptozyme/Wampole	83	Rapitex/Calbiochem-Behring	15
ASO quantitative	/Difco	48	/Fisher	13
Cold agglutinins	tube dilution/in-house	87	—	—
C-reactive protein	/Hyland	31	/ICL Scientific	23
Febrile agglutinins	/Difco	44	/Fisher	41
Fungal agglutinins ^b	Reference labs	56	—	—
Hepatitis B Surface antigen ^b	Auszyme/Abbott	55	Ausria/Abbott	22
Infectious mononucleosis, qualitative	Mono-test/Wampole	46	Monospot/Ortho	25
Rheumatoid factor, qualitative	Rheumaton/Wampole	48	Rapitex/Calbiochem-Behring	11
Rubella ^b	Rubazyme/Abbott	36	—	—
Syphilis, confirm	Reference labs	60	—	—
Syphilis, screen	RPR/HW&D	83	RPR/Dade	10
Viral agglutinins ^b	Reference labs	50	—	—

^a % of respondents who used test and answered the question

^b less than 20 respondents answered question

HW&D (Hynson, Westcott & Dunning); ASO (antistreptolysin O)

yearly. We compared the popularity of particular kits used in Oklahoma with those throughout the US based on CAP survey results.¹ The two most popular methods/manufacturers in Oklahoma were also the most popular throughout the US, in the same order, for the qualitative antistreptolysin O, infectious mononucleosis, and rheumatoid fac-

. . . More syphilis (screen) tests were ordered daily than any other test.

tor tests. There was one exception. In Oklahoma, laboratory technologists preferred the Mono-test/Wampole over the Monospot/Ortho,

whereas the opposite was true for the entire country.

A previous national survey has shown syphilis serology to be more common than non-syphilis serology in a region including Arkansas, Louisiana, Oklahoma, and Texas.² In Oklahoma, the most commonly available test is for infectious mononucleosis, followed by tests for rheumatoid factor and syphilis. However, more syphilis screening tests are ordered daily than any other procedure.

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News From The Oklahoma State Department of Health

Rabies In Oklahoma

Oklahoma typically ranks among the ten states with the highest number of proven animal rabies cases per year and has been considered an endemic area for rabies. Recently, however, rabies has spread into the mid-Atlantic states, which, historically, have been essentially rabies-free. This spread has spawned national publicity concerning rabies.

The skunk population is the reservoir for the rabies virus in Oklahoma and other states in this region. Since 1971, 48 percent of the skunks tested in the OSDH Public Health Laboratory (the only lab in Oklahoma equipped to perform rabies testing) have been found rabid. Quite often, when rabies occurs in domesticated animals such as cattle, horses, dogs, and cats, the source of infection is traced to previous contact with skunks. Of course,

human exposure to these rabid animals requires anti-rabies prophylaxis.

The current regimen for anti-rabies prophylaxis consists of administering one dose of Human Rabies Immune Globulin (RIG) for immediate passive protection and five doses of the new Human Diploid Cell Rabies Vaccine (HDCV), given over a 28-day period. This regimen, if given as recommended, is highly effective. The only documented failures of the vaccine to provide protection are in two instances in which the RIG was **not** given in conjunction with the HDCV.

It is recommended that persons immunize their pets against rabies and avoid contact with animals from the wild to prevent exposure to rabies. Because of the endemicity of rabies throughout Oklahoma, all animal bites should be carefully evaluated. Local health departments and the OSDH Epidemiology Service are available for consultation on potential rabies exposures. □

COMMUNICABLE DISEASES IN OKLAHOMA FOR MARCH 1983

DISEASE	MARCH	MARCH	FEBRUARY	TOTAL TO DATE	
	1983	1982	1983	1983	1982
Amebiasis	2	1	—	2	3
Aseptic Meningitis	5	3	6	19	10
Brucellosis	—	—	—	—	1
Encephalitis, Infectious	1	—	2	4	5
Gonorrhea (Use Form ODH-228)	1434	1495	1254	4056	3894
Hepatitis A	31	60	43	94	130
Hepatitis B	23	20	7	37	52
Hepatitis Unspecified	28	18	30	70	61
Measles (Rubeola)	—	—	—	—	—
Meningococcal Infections	5	2	7	13	8
Pertussis	3	1	3	7	2
Rabies (Animal)	12	25	8	25	49
Rocky Mountain Spotted Fever	—	—	—	—	—
Rubella	—	—	—	—	1
Rubella (Congenital)	—	—	—	—	—
Salmonellosis	21	10	63	99	35
Shigellosis	8	18	7	20	83
Syphilis (Use Form ODH-228)	20	16	24	66	46
Tetanus	—	—	—	—	—
Tuberculosis	16	25	23	59	91
Tularemia	—	1	—	—	1
Typhoid Fever	—	—	—	—	2

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Four Loss Prevention Seminars Set for Tulsa and OKC in July

The Physicians Liability Insurance Company (PLICO) will sponsor four professional liability loss prevention seminars during July. Two programs will be held at Tulsa's Camelot Inn on July 13 and 14; two others are scheduled for July 27 and 28 at the Hilton Inn West in Oklahoma City.

Physicians who attend a seminar are entitled to a 5% per year discount on professional liability insurance premiums for three consecutive years beginning in 1984.

The 5% premium discount applies only to a physician's basic coverage, not to any surcharge imposed by PLICO.

Program speakers include PLICO board member Billy Goetzinger, MD, a defense attorney from one of the two law firms used by PLICO, and Ed Kelsay, PLICO loss prevention manager and OSMA legal counsel.

A special seminar registration form will be sent to all Oklahoma physicians in early June. Registrations will not be accepted until that time. □

Attorneys' Ad Not Improper State Bar Association Says

The Oklahoma Bar Association (OBA) has declined to take disciplinary action against a panel of attorneys that solicited clients for malpractice cases through advertisements placed in several Oklahoma newspapers.

OSMA had filed a complaint with the bar association asking it to review the ethics and propriety involved in the placement of advertisements by a "Medical/Legal/Hospital Malpractice Panel." OSMA was joined in its complaint by the Oklahoma Osteopathic Association and the Oklahoma Hospital Association.

In a letter to OSMA, Gary A. Rife, OBA general counsel, stated that under the new rules governing advertising by lawyers in Oklahoma "no disciplinary action against the attorneys involved was feasible or appropriate."

Rife added that the only possible deviation from the newly established rules appeared to be the omission of the name of an attorney responsible for the content of the advertisement.

The medical association viewed the advertisements as a blatant solicitation of clients that misrepresented the panel's true intent. Rife informed OSMA that the attorney responsible for placing the advertisement has indicated that all future advertisements will be in strict conformity with the new rules. □

Leukemia Society Accepting Research Grant Applications

The Leukemia Society of America is now accepting applications for 1984 grants to support research in the field of leukemia and related disorders. The grants are intended to encourage studies at both the basic science and clinical levels.

The society offers three awards to individuals whose work is concentrated on discovering cures for leukemia, lymphomas, Hodgkin's disease, and multiple myeloma.

Five-year scholarships totaling \$125,000 are available to researchers who have demonstrated their ability to conduct original investigations in the specified fields. Two two-year fellowships, for \$37,000 and \$30,000, respectively, are offered to individuals in the intermediate and entry-level stages of their careers.

Candidates for grants in all categories must hold a doctoral degree; however, they need not have attained the tenured status of associate professor.

Deadline for filing applications is September 1, 1983. Only one application in each grant category from an individual will be considered. Project proposals will be evaluated by the society's Medical and Scientific Advisory Committee. Reviews will take place in January 1984, with funding to start the July following.

For application forms, write to Research Grant Program, Leukemia Society of America, 800 Second Avenue, New York, New York 10017. □

AMA Auxiliary Programs Target Child Abuse and Drunk Driving

The American Medical Association Auxiliary will focus its 1983-1984 "Shape Up for Life" campaign on awareness and prevention of child abuse and drunk driving.

The auxiliary will launch a nationwide program aimed at preventing child abuse and neglect. The program will emphasize community involvement and parent education. An estimated 650,000 cases of abuse and neglect are reported every year.

Auxiliary efforts to curb drunk driving will be directed toward legislative initiatives to strengthen and enforce drunk driving laws. More than 26,000 Americans are killed each year by drunk drivers, 5,000 of whom are young people. Drunk driving has become the number one killer of men and women in their teens and twenties.

Campaign materials developed by the auxiliary will be designed to promote public awareness of these two major national problems. □

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Serious Injuries Lead Disease As Cause of Death in Indians

Serious injuries have replaced infectious diseases as the leading cause of death among all American Indians. Young adults and the elderly of the Hopi tribe are especially vulnerable, according to a new study.

A group of Baltimore researchers, headed by Sylvia G. Simpson, MD, from the Johns Hopkins School of Hygiene and Public Health, studied the incidence and circumstances of injuries occurring in 1979 and 1980 among a Hopi population of about 9,000 living primarily on a reservation in northeastern Arizona.

Dr Simpson and her colleagues found that the leading causes of serious injuries were, in descending order: falls, motor vehicle crashes, suicide attempts, and assaults. The injury incidence rate was highest among Hopis 85 years or older and second highest in the 20- to 29-year age group.

A dramatic finding was that Hopis 15 to 24 years old accounted for 58% of all suicide attempts. In 1979 the suicide rate in this age group was 118 per 100,000 among Hopis, compared with 12 per 100,000 for the United States as a whole.

The high suicide rate suggests that Hopis may be at especially high risk, Dr Simpson says, along with several other Indian tribes, including the Apache, Papago, Shoshone-Bannock, Northern Cheyenne, and Blackfoot.

Falls accounted for nearly three-quarters of all injuries in Hopis 65 years or older and were the leading cause of all injuries, except in the 15- to 34-year age group. The circumstances of some of the falls are peculiar to the Hopi population, Dr Simpson points out. Some individuals fell from the edge of steep-sloped mesas and others from pueblo roofs while watching ceremonial dances.

Thirty-nine percent of all motor vehicle injuries occurred in the 15- to 24-year age group. Open-backed pickup trucks were the vehicles most often involved, and vehicle rollovers were common.

Thirty-eight percent of the assault injuries occurred in the 15- to 24-year age group. The most commonly used weapons were fists and feet, blunt objects, and knives. Although handgun-related deaths account for the majority of homicides in the United States, handguns and other firearms are rare among Hopis,



John A. McIntyre, MD, (right), OSMA immediate past president, presents a \$300 check to Fairview High School teacher Geraldine Burns. Ms Burns teaches the student who won first place in the 1983 "Ability Counts" contest sponsored by the Governor's Committee on Employment of the Handicapped. OSMA contributes the expense-paid fare to Washington, DC, each year to the teacher of the contest's first-place winner.

Dr Simpson reports, resulting in a lower incidence of handgun-related homicides. □

Number of US Women Physicians Expected to Triple by Year 2000

The number of women physicians in the United States is expected to triple by the year 2000. By that time, one in five physicians will be a woman, up from the current one in ten.

Recommendations by the Ad Hoc Committee on Women Physicians of the American Medical Association (AMA) urge county, state, and national specialty societies to recruit women members and to remove barriers that may have prevented them from joining.

"Recruitment of women physicians by the AMA and other elements of the federation is essential to the continuing growth of organized medicine and its vitality," the committee's report stated.

The committee's recommendations were accepted by the AMA's Board of Trustees for transmittal to the House of Delegates.

In a related action, the trustees voted to extend the charter of the committee for another year and to add a student member. □

In Memoriam

Deaths

GEORGE ROSS, MD
1907 - 1983

George Ross, MD, 76, retired Enid physician, died March 11. Dr Ross was born in Mint, Tennessee and was graduated from the University of Oklahoma College of Medicine in 1935. Following residency training in medicine and surgery, he and his wife, Hope Ross, MD, also a physician, established their practice in Enid in 1937. Dr Ross served with the medical corps during World War II and the Korean War. He was a Life Member of the OSMA.

JOHN A. BRASFIELD, MD
1913 - 1983

Tulsa general practitioner John A. Brasfield, MD, died April 15, 1983. Born in Dresden, Tennessee, Dr Brasfield graduated from the University of Tennessee College of Medicine in 1935. During World War II he served with the US Army and later practiced in Okemah, Oklahoma, before moving to Tulsa in 1958. Dr Brasfield held a Life Membership in the Oklahoma State Medical Association.

HOLICE B. POWELL, MD
1928 - 1983

An Idabel obstetrician/gynecologist, Holice B. Powell, MD, died March 18. Born in Tigrett, Tennessee, Dr Powell was graduated from the University of Tennessee College of Medicine in 1951. Following residency training, he established his practice in Little Rock, Arkansas. Later he moved to Okmulgee where he practiced for 17 years before moving to Idabel. □

1982

<i>A. A. Walker, MD</i>	<i>July</i>
<i>Wesley Russell Mote, MD</i>	<i>July 24</i>
<i>Thomas H. Fair, MD</i>	<i>August 15</i>
<i>Clyde E. Harris, MD</i>	<i>September 1</i>
<i>Tillman A. Ragan, MD</i>	<i>September 5</i>
<i>Floyd T. Hubbard, MD</i>	<i>September 23</i>
<i>William A. Eastland, MD</i>	<i>October 3</i>
<i>William J. Craig, MD</i>	<i>October 19</i>
<i>William M. Wood, MD</i>	<i>October 30</i>
<i>Hugh C. Graham, Sr, MD</i>	<i>November 11</i>
<i>John David Wilson, MD</i>	<i>November 11</i>
<i>Clinton Gallaher, MD</i>	<i>November 15</i>
<i>Bert F. Keltz, MD</i>	<i>November 30</i>
<i>Berget H. Blocksom, MD</i>	<i>December 26</i>
<i>Harold T. Baugh, MD</i>	<i>December 28</i>

1983

<i>Dewey K. Rhea, MD</i>	<i>January 3</i>
<i>Fred C. Buffington, MD</i>	<i>January 4</i>
<i>C. D. Cunningham, MD</i>	<i>January 26</i>
<i>William S. Jacobs, MD</i>	<i>February 9</i>
<i>John R. Little, MD</i>	<i>February 11</i>
<i>L. A. S. Johnston, MD</i>	<i>February 16</i>
<i>Selwyn A. Willis, MD</i>	<i>March 3</i>
<i>Virgil Ray Forester, MD</i>	<i>March 8</i>
<i>George Ross, MD</i>	<i>March 11</i>
<i>Holice B. Powell, MD</i>	<i>March 18</i>
<i>John A. Brasfield, MD</i>	<i>April 15</i>

□

Massachusetts Society Offers CDC Morbidity Report at Cost

The Massachusetts Medical Society's Committee on Publications will begin reprinting and distributing the Centers for Disease Control's (CDC) *Morbidity and Mortality Weekly Report (MMWR)* on July 1, 1983. The report will be available at cost to interested health care professionals.

MMWR is a weekly bulletin that carries information on the latest developments in epidemiology and public health, including vital statistics and environmental hazards. Originally, it was mailed to more than 100,000 subscribers as a public service of the CDC.

Budget constraints forced the CDC to institute subscription charges last November. The rates (\$70 per year, third class mailing; \$90 per year, first class), set by the National Technical Information Service, resulted in a circulation drop of about 80,000.

The Massachusetts society is offering *MMWR* to subscribers at about one-third the established rate. For information on ordering,

write to MMS Publications, CSPO, Box 9120, Waltham, Massachusetts 02254.

The society's Committee on Publications also publishes the *New England Journal of Medicine*. □

Two Oklahoma Surgeons Elected to High Office in National Society

Claude H. Organ, Jr, MD, Professor of Surgery, University of Oklahoma Health Sciences Center, has been named president-elect of the Southwestern Surgical Congress during the 35th annual meeting held at the Pointe Resort in Phoenix May 1-5, 1983. He will take office next May when the congress meets in Honolulu.

Elected vice-president of the congress was Ronald C. Elkins, MD, Chief, Thoracic Surgery Section, University of Oklahoma Health Sciences Center.

The Southwestern Surgical Congress, the nation's third largest surgical organization, has a membership of nearly 1,500 surgeons representing 14 states. □



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Book Reviews

Current Pediatric Therapy — 8. 8th Edition. By S. S. Gellis and B. M. Kagan (editors). Philadelphia: W. B. Saunders Company, 1978. Pp 879, Price not given.

This is the eighth edition of this well-known book edited by Gellis and Kagan. It is expanded by another 100 pages and covers the treatment of virtually every disorder of infants and children. In the sixth and seventh edition, a postage paid reply card was bound inside of the back cover, inviting response from readers. As a result of these suggestions, according to the editors, several important changes in the book have occurred, including subdivision of the section on disorders of the lungs, new discussions of the sudden infant death syndrome, informed consent in pediatric practice, and others for the eighth edition. Some 294 contributors prepared 339 articles, 270 of which are newly written, according to the preface.

This book has stood the test of time and can continue to be recommended as a very practical guide to therapy in infants and children. *Harris D. Riley, Jr, M.D.*

Drug Treatment: Principles and Practice of Clinical Pharmacology and Therapeutics. Edited by G. S. Avery. Acton, Massachusetts: Publishing Sciences Group, 1976. Pp 1,048, price \$25.00.

This pharmacology text is somewhat different in format than most. The basic approach of this large book deals with the selection and use of drugs within a disease-oriented setting. It is the hope of the editor that it will bridge the gap between textbooks that emphasize diagnosis and pathophysiology of disease and those featuring therapeutics.

Drug Treatment is a compilation by many internationally recognized experts in clinical pharmacology. A small number of the drugs recommended are not available at this time in the United States. The book is highly structured, well organized, and contains many subheadings in each chapter. Each chapter begins with a synopsis of important principles and ends with recent references.

The book is divided into three sections. The first, entitled "Clinical Pharmacology," describes the clinical significance and use of basic pharmacokinetics and bioavailability factors in arriving at individual drug therapy. There are, in addition, chapters on the unique problems of pediatric and geriatric patients and several chapters on adverse drug reactions and drug interactions.

The second section, "Therapeutics," considers various types of drug therapies. Such therapies of general categories of disease are considered chiefly by organ systems. In general, consideration is given not only to therapeutics in various disease states, but also to the influence the drug state may have on the effect of the drug, its metabolism, distribution, and excretion.

The final part of the book is made up of appendices and contains a wealth of information. Particularly useful is appendix A, in which values of determinations such as plasma, half-life, volume of distribution, and protein-binding of many commonly used drugs are tabulated. *Harris D. Riley, Jr, MD*

Miscellaneous Advertisements

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WARNINGS: Ru-Tuss Tablets may cause drowsiness. Patients should be warned of possible additive effects caused by taking antihistamines with alcohol, hypnotics, sedatives or tranquilizers.

PRECAUTIONS: Ru-Tuss Tablets contain belladonna alkaloids, and must be administered with care to those patients with urinary bladder neck obstruction. Caution should be exercised when Ru-Tuss Tablets are given to patients with hypertension, cardiac or peripheral vascular disease or hyperthyroidism. Patients should avoid driving a motor vehicle or operating dangerous machinery (See WARNINGS:).

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Anxious patients improve in just a few days

And what is more reassuring to an excessively anxious patient than medication that promptly starts to relieve his discomforting symptoms? Valium® (diazepam/Roche) begins working within 30 to 90 minutes. Patients continue to improve in just a few days, and relief continues throughout the course of treatment.

There are other important benefits with Valium as well—along with its broad clinical range, Valium has an efficacy/safety profile that few, if any, drugs can match. This record has been achieved with extensive clinical experience, undoubtedly including yours. And, as you must have observed, side effects more serious than drowsiness, fatigue or ataxia rarely occur. Nevertheless, as with any CNS-acting agent, patients should be cautioned about driving, operating hazardous machinery or ingesting alcohol or other CNS-depressant drugs while taking Valium.

Yet another benefit Valium affords is flexibility:






Available in 2-mg, 5-mg and 10-mg scored tablets, Valium enables you to titrate dosage to individual patient needs. For the geriatric patient, a starting dosage of 2 to 2½ mg once or twice a day is recommended. And, for patients who forget or skip medication, you can prescribe Valrelease™ (diazepam/Roche) 15-mg slow-release capsules,

knowing that Valrelease will assure all the benefits of Valium 5 mg *t.i.d.* with the convenience of once-a-day dosage.

Discontinuation of Valium (or Valrelease) is typically as smooth as its start in short-term therapy. However, Valium and Valrelease should be discontinued gradually after more extended treatment. As you diminish dosage, the built-in tapering action of Valium and Valrelease will help avoid rapidly recurring anxiety symptoms and symptoms of withdrawal, and will help ease the patient's transition to independent coping when therapeutic goals have been achieved.

...that's one of
the unique benefits of
Valium®
diazepam/Roche

Valium® (diazepam/Roche)  Tablets
Valrelease™ (diazepam/Roche)  slow-release Capsules
Injectable Valium® (diazepam/Roche) 

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, impending or acute delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in: relief of skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome. *Oral forms* may be used adjunctively in convulsive disorders, but not as sole therapy. *Injectable form* may also be used adjunctively in: status epilepticus; severe recurrent seizures; tetanus; anxiety; tension or acute stress reactions prior to endoscopic/surgical procedures; cardioversion.

The effectiveness of diazepam in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindications: Tablets or capsules in children under 6 months of age; known hypersensitivity; acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: As with most CNS-acting drugs, caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals (drug addicts or alcoholics) under careful surveillance because of predisposition to habituation/dependence.

Use in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because their use is rarely a matter of urgency and because of increased risk of congenital malformations, as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

ORAL: Advise patients against simultaneous ingestion of alcohol and other CNS depressants.

Not of value in treatment of psychotic patients; should not be employed in lieu of appropriate treatment. When using oral forms adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication; abrupt withdrawal in such cases may be associated with temporary increase in frequency and/or severity of seizures.

INJECTABLE: To reduce the possibility of venous thrombosis, phlebitis, local irritation, swelling and, rarely, vascular impairment when used IV: inject slowly; taking at least one minute for each 5 mg (1 ml) given; do not use small veins, i.e., dorsum of hand or wrist, use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Injectable Valium directly IV, it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Administer with extreme care to elderly, very ill, those with limited pulmonary reserve because of possibility of apnea and/or cardiac arrest; concomitant use of barbiturates, alcohol or other CNS depressants increases depression with increased risk of apnea; have resuscitative facilities available. When used with narcotic analgesic eliminate or reduce narcotic dosage at least 1/3, administer in small increments. Should not be administered to patients in shock, coma, acute alcoholic intoxication with depression of vital signs.

Has precipitated tonic status epilepticus in patients treated for petit mal status or petit mal variant status. Not recommended for OB use.

Efficacy/safety not established in neonates (age 30 days or less); prolonged CNS depression observed. In children, give slowly (up to 0.25 mg/kg over 3 minutes) to avoid apnea or prolonged somnolence; can be repeated after 15 to 30 minutes. If no relief after third administration, appropriate adjunctive therapy is recommended.

Precautions: If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of diazepam, i.e., phenothiazines, narcotics, barbiturates, MAO inhibitors and antidepressants. Protective measures indicated in highly anxious patients with accompanying depression who may have suicidal tendencies. Observe usual precautions in impaired hepatic function; avoid accumulation in patients with compromised kidney function. Limit oral dosage to smallest effective amount in elderly and debilitated to preclude ataxia or over-dosage (initially 2 to 2½ mg once or twice daily; increasing gradually as needed and tolerated).

The clearance of diazepam and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

INJECTABLE: Although promptly controlled, seizures may return; readminister if necessary; not recommended for long-term maintenance therapy. Laryngospasm/increased cough reflex are possible during peroral endoscopic procedures; use topical anesthetic, have necessary countermeasures available. Hypotension or muscular weakness possible, particularly when used with narcotics, barbiturates or alcohol. Use lower doses (2 to 5 mg) for elderly/debilitated.

Adverse Reactions: Side effects most commonly reported were drowsiness, fatigue, ataxia. Infrequently encountered were confusion, constipation, depression, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity,

insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, discontinue drug.

Because of isolated reports of neutropenia and jaundice, periodic blood counts, liver function tests advisable during long-term therapy. Minor changes in EEG patterns, usually low-voltage fast activity, observed in patients during and after diazepam therapy are of no known significance.

INJECTABLE: Venous thrombosis/phlebitis at injection site, hypoactivity, syncope, bradycardia, cardiovascular collapse, nystagmus, urticaria, hiccups, neutropenia. In peroral endoscopic procedures, coughing, depressed respiration, dyspnea, hyperventilation, laryngospasm/pain in throat or chest have been reported.

Dosage: Individualize for maximum beneficial effect.

ORAL: **Adults:** Anxiety disorders, relief of symptoms of anxiety—Valium (diazepam/Roche) **tablets**, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 Valrelease capsules (15 to 30 mg) daily. Acute alcohol withdrawal—**tablets**, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; or 2 **capsules** (30 mg) the first 24 hours, then 1 **capsule** (15 mg) daily as needed. Adjunctively in skeletal muscle spasm—**tablets**, 2 to 10 mg t.i.d. or q.i.d.; or 1 or 2 **capsules** (15 to 30 mg) once daily. Adjunctively in convulsive disorders—**tablets**, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 **capsules** (15 to 30 mg) once daily.

Geriatric or debilitated patients: **Tablets**—2 to 2½ mg 1 or 2 times daily initially, increasing as needed and tolerated (see Precautions). **Capsules**—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose.

Children: **Tablets**—1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use in children under 6 months). **Capsules**—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose (not for use in children under 6 months).

INJECTABLE: Usual initial dose in older children and adults is 2 to 20 mg I.M. or IV, depending on indication and severity. Larger doses may be required in some conditions (tetanus). In acute conditions injection may be repeated within 1 hour, although interval of 3 to 4 hours is usually satisfactory. Lower doses (usually 2 to 5 mg) with slow dosage increase for elderly or debilitated patients and when sedative drugs are added. (See Warnings and Adverse Reactions.) For dosages in infants and children see below; have resuscitative facilities available.

I.M. use: by deep injection into the muscle.

IV use: inject slowly; take at least one minute for each 5 mg (1 ml) given. Do not use small veins, i.e., dorsum of hand or wrist. Use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute Valium with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Valium directly IV, it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Moderate anxiety disorders and symptoms of anxiety: 2 to 5 mg I.M. or IV, and severe anxiety disorders and symptoms of anxiety: 5 to 10 mg I.M. or IV, repeat in 3 to 4 hours if necessary; acute alcohol withdrawal, 10 mg I.M. or IV initially; then 5 to 10 mg in 3 to 4 hours if necessary. Muscle spasm, in adults, 5 to 10 mg I.M. or IV initially; then 5 to 10 mg in 3 to 4 hours if necessary (tetanus may require larger doses); in children administer IV slowly; for tetanus in infants over 30 days of age, 1 to 2 mg I.M. or IV, repeat every 3 to 4 hours if necessary; in children 5 years or older, 5 to 10 mg repeated every 3 to 4 hours as needed. Respiratory assistance should be available.

Status epilepticus, severe recurrent convulsive seizures (IV route preferred), 5 to 10 mg adult dose administered slowly; repeat at 10- to 15-minute intervals up to 30 mg maximum. Repeat in 2 to 4 hours if necessary, keeping in mind possibility of residual active metabolites. Use caution in presence of chronic lung disease or unstable cardiovascular status. Infants (over 30 days) and children (under 5 years), 0.2 to 0.5 mg slowly every 2 to 5 min., up to 5 mg (IV preferred). Children 5 years plus, 1 mg every 2 to 5 min., up to 10 mg (slow IV preferred); repeat in 2 to 4 hours if needed. EEG monitoring may be helpful. In endoscopic procedures, titrate IV dosage to desired sedative response, generally 10 mg or less but up to 20 mg (if narcotics are omitted) immediately prior to procedure; if IV cannot be used, 5 to 10 mg I.M. approximately 30 minutes prior to procedure. As preoperative medication, 10 mg I.M. in cardioversion, 5 to 15 mg IV within 5 to 10 minutes prior to procedure. Once acute symptomatology has been properly controlled with injectable form, patient may be placed on oral form if further treatment is required.

Management of Overdosage: Manifestations include somnolence, confusion, coma, diminished reflexes. Monitor respiration, pulse, blood pressure; employ general supportive measures, IV fluids, adequate airway. Use levarterenol or metaraminol for hypotension. Dialysis is of limited value.

How Supplied:

ORAL Valium scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100 and 500; Prescription Paks of 50, available in trays of 10; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25 and in boxes containing 10 strips of 10.

Valrelease (diazepam/Roche) slow-release capsules—15 mg (yellow and blue), bottles of 100; Prescription Paks of 30.

INJECTABLE: Ampuls, 2 ml, boxes of 10; Vials, 10 ml, boxes of 1, Tel-E-Ject® (dispensable syringes), 2 ml, boxes of 10. Each ml contains 5 mg diazepam, compounded with 40% propylene glycol, 10% ethyl alcohol, 5% sodium benzoate and benzoic acid as buffers, and 1.5% benzyl alcohol as preservative.





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References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Kramer MJ, Mauriz YR, Robertson TL, Timmes MD: Morphological studies on the effect of subinhibitory and inhibitory doses of sulfamethoxazole-trimethoprim combination on *Escherichia coli*. Presented at the 12th International Congress of Chemotherapy, Florence, Italy, Jul 19-24, 1981. 3. Spicehandler J et al: *Rev Infect Dis* 4:562-565, Mar-Apr 1982. 4. Stamey TA: *Pathogenesis and Treatment of Urinary Tract Infections*. Baltimore, Williams & Wilkins, 1980, p. 13. 5. Ronald AR: *Clin Ther* 3:176-189, Mar 1980. 6. Cooper J, Brumfitt W, Hamilton-Miller JMT: *J Antimicrob Chemother* 6:231-239, 1980. 7. Gower PE, Tasker PRW: *Br Med J* 1:684-686, Mar 20, 1976. 8. Cosgrove MD, Morrow JW: *J Urol* 111:670-672, May 1974. 9. Irvani A et al: *Antimicrob Agents Chemother* 19:598-604, Apr 1981. 10. Schaeffer AJ, Flynn S, Jones J: *J Urol* 125:825-827, Jun 1981. 11. Rous SN: *J Urol* 125:228-229, Feb 1981. 12. BAC-DATA Medical Information Systems, Inc., Bacteriologic Reports, Winter Series, 1976-82.

Bactrim™ DS (trimethoprim and sulfamethoxazole/Roche)

Before prescribing, please consult complete product information, a summary of which follows:

Indications and Usage: For the treatment of urinary tract infections due to susceptible strains of the following organisms: *Escherichia coli*, *Klebsiella-Enterobacter*, *Proteus mirabilis*, *Proteus vulgaris*, *Proteus morganii*. It is recommended that initial episodes of uncomplicated urinary tract infections be treated with a single effective antibacterial agent rather than the combination. *Note:* The increasing frequency of resistant organisms limits the usefulness of all antibacterials, especially in these urinary tract infections.

For acute otitis media in children due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over other antimicrobials. To date, there are limited data on the safety of repeated use of Bactrim in children under two years of age. Bactrim is not indicated for prophylactic or prolonged administration in otitis media at any age.

For acute exacerbations of chronic bronchitis in adults due to susceptible strains of *Haemophilus influenzae* or *Streptococcus pneumoniae* when in physician's judgment it offers an advantage over a single antimicrobial agent.

For enteritis due to susceptible strains of *Shigella flexneri* and *Shigella sonnei* when antibacterial therapy is indicated.

Also for the treatment of documented *Pneumocystis carinii* pneumonitis.

Contraindications: Hypersensitivity to trimethoprim or sulfonamides; patients with documented megaloblastic anemia due to folate deficiency; pregnancy at term; nursing mothers because sulfonamides are excreted in human milk and may cause kernicterus; infants less than 2 months of age.

Warnings: BACTRIM SHOULD NOT BE USED TO TREAT STREPTOCOCCAL PHARYNGITIS. Clinical studies show that patients with group A β -hemolytic streptococcal tonsillopharyngitis have higher incidence of bacteriologic failure when treated with Bactrim than do those treated with penicillin. Deaths from hypersensitivity reactions, hepatocellular necrosis, agranulocytosis, aplastic anemia and other blood dyscrasias have been associated with sulfonamides. Experience with trimethoprim is much more limited but occasional interference with hematopoiesis has been reported as well as an increased incidence of thrombopenia with purpura in elderly patients on certain diuretics, primarily thiazides. Sore throat, fever, pallor, purpura or jaundice may be early signs of serious blood disorders. Frequent CBC's are recommended; therapy should be discontinued if a significantly reduced count of any formed blood element is noted.

Precautions: *General:* Use cautiously in patients with impaired renal or hepatic function, possible folate deficiency, severe allergy or bronchial asthma. In patients with glucose-6-phosphate dehydrogenase deficiency, hemolysis, frequently dose-related, may occur. During therapy, maintain adequate fluid intake and perform frequent urinalyses, with careful microscopic examination, and renal function tests, particularly where there is impaired renal function. Bactrim may prolong prothrombin time in those receiving warfarin; reassess coagulation time when administering Bactrim to these patients. *Pregnancy:* Teratogenic Effects: Pregnancy Category C. Because trimethoprim and sulfamethoxazole may interfere with folate acid metabolism, use during pregnancy only if potential benefits justify the potential risk to the fetus.

Adverse Reactions: All major reactions to sulfonamides and trimethoprim are included, even if not reported with Bactrim. *Blood dyscrasias:* Agranulocytosis, aplastic anemia, megaloblastic anemia, thrombopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia. *Allergic reactions:* Erythema multiforme, Stevens-Johnson syndrome, generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis. *Gastrointestinal reactions:* Glossitis, stomatitis, nausea, emesis, abdominal pains, hepatitis, hepatocellular necrosis, diarrhea, pseudomembranous colitis and pancreatitis. *CNS reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo, insomnia, apathy, fatigue, muscle weakness and nervousness. *Miscellaneous reactions:* Drug fever, chills, toxic nephrosis with oliguria and anuria, periarthritis nodosa and L.E. phenomenon. Due to certain chemical similarities to some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia in patients; cross-sensitivity with these agents may exist. In rats, long-term therapy with sulfonamides has produced thyroid malignancies.

Dosage: Not recommended for infants less than two months of age.

URINARY TRACT INFECTIONS AND SHIGELLOSIS IN ADULTS AND CHILDREN, AND ACUTE OTITIS MEDIA IN CHILDREN:

Adults: Usual adult dosage for urinary tract infections—1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 10-14 days. Use identical daily dosage for 5 days for shigellosis.

Children: Recommended dosage for children with urinary tract infections or acute otitis media—8 mg/kg trimethoprim and 40 mg/kg sulfamethoxazole per 24 hours, in two divided doses for 10 days. Use identical daily dosage for 5 days for shigellosis.

For patients with renal impairment: Use recommended dosage regimen when creatinine clearance is above 30 ml/min. If creatinine clearance is between 15 and 30 ml/min, use one-half the usual regimen. Bactrim is not recommended if creatinine clearance is below 15 ml/min.

ACUTE EXACERBATIONS OF CHRONIC BRONCHITIS IN ADULTS:

Usual adult dosage: 1 DS tablet (double strength), 2 tablets (single strength) or 4 teasp. (20 ml) b.i.d. for 14 days.

PNEUMOCYSTIS CARINII PNEUMONITIS:

Recommended dosage: 20 mg/kg trimethoprim and 100 mg/kg sulfamethoxazole per 24 hours in equal doses every 6 hours for 14 days. See complete product information for suggested children's dosage table.

Supplied: Double Strength (DS) tablets, each containing 160 mg trimethoprim and 800 mg sulfamethoxazole, bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 20. Tablets, each containing 80 mg trimethoprim and 400 mg sulfamethoxazole—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 40. Pediatric Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per teaspoonful (5 ml); cherry flavored—bottles of 100 ml and 16 oz (1 pint). Suspension, containing 40 mg trimethoprim and 200 mg sulfamethoxazole per tea spoonful (5 ml); fruit-limonc flavored—bottles of 16 oz (1 pint).



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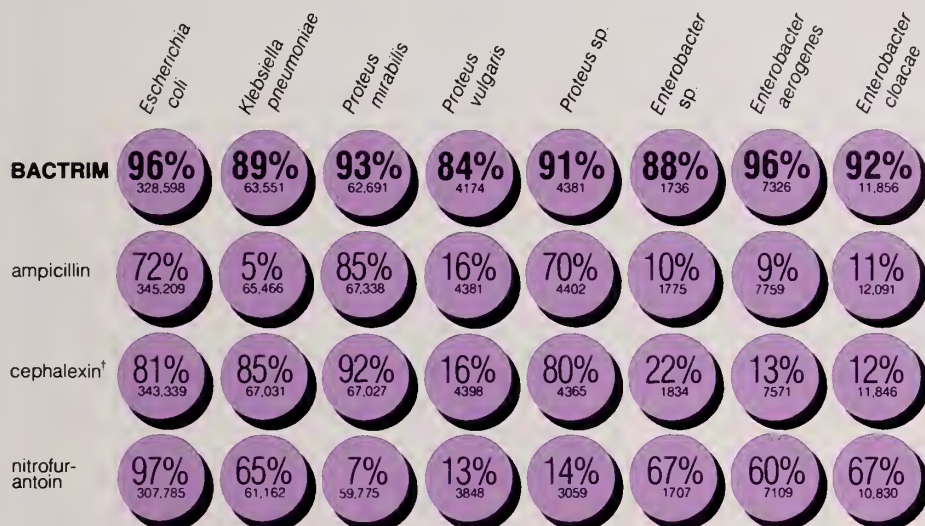
In vitro studies demonstrate



Bactericidal activity

with minimal resistance

Percent of isolates of common uropathogens sensitive to BACTRIM and to other antimicrobials

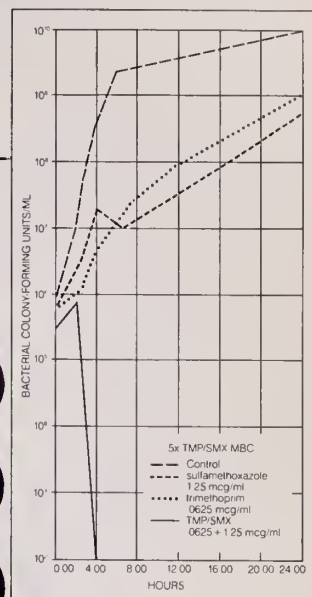


†Analogous to cephalothin, the primary antibiotic disc used in testing.

Source: The Bacteriologic Report, BAC-DATA Medical Information Systems, Inc., Winter Series, 1981-82.

Numbers under percentages refer to the projected number of isolates tested.

RAPID IN VITRO DESTRUCTION OF *E. COLI**



Kill curve kinetics of Bactrim and its individual components against *E. coli* in vitro.¹

The bactericidal action of Bactrim has been demonstrated *in vitro* on laboratory strains of *E. coli*^{1,2} and on clinical isolates of *E. coli*, *Klebsiella-Enterobacter*, *Proteus mirabilis* and *Morganella morganii*³—the most common causative organisms of urinary tract infections.⁴ More than 100 published studies attest to the efficacy of Bactrim in recurrent urinary tract infections due to these organisms.⁵ In comparative studies with other antimicrobials, Bactrim has consistently demonstrated unsurpassed efficacy during therapy.⁶⁻¹¹

Resistance to Bactrim develops more slowly than to either of its components alone *in vitro*.^{*} Among urinary tract isolates, resistance has rarely emerged in susceptible strains.^{5,12} Bactrim is contraindicated in pregnancy at term, during lactation, in infants less than two months old and in documented megaloblastic anemia due to folate deficiency. Initial episodes of uncomplicated urinary infections should be treated with a single-agent antimicrobial.

Bactrim™ DS

(trimethoprim and sulfamethoxazole/Roche)

b.i.d. for recurrent urinary tract infections

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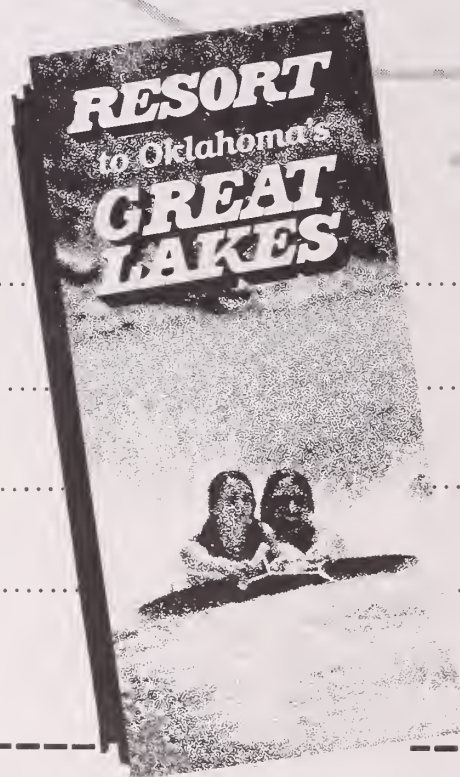
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one sees every day**

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And since they're usually both

present in musculoskeletal
disorders, the best therapy is
often a combination of anal-
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See important information on next page.

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of pain and anxiety

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(BRIEF SUMMARY)

DESCRIPTION: Each tablet contains 200 mg meprobamate and 325 mg aspirin.

INDICATIONS: Adjunct in short-term treatment of pain accompanied by tension and/or anxiety in patients with musculoskeletal disease. Clinical trials demonstrated in these situations relief of pain is somewhat greater than with aspirin alone. Effectiveness in long-term use, i.e. over 4 months, has not been assessed by systematic clinical studies. Physicians should periodically reassess usefulness of drug for individual patients.

CONTRAINDICATIONS: ASPIRIN: Allergic or idiosyncratic reactions to aspirin or related compounds. MEPROBAMATE: Acute intermittent porphyria, allergic or idiosyncratic reactions to meprobamate or related compounds, e.g. carisoprodol, meprobamate, or carbamadol.

WARNINGS: ASPIRIN: Use salicylates with extreme caution in patients with peptic ulcer, asthma, coagulation abnormalities, hypoprothrombinemia, vitamin K deficiency, or those on anticoagulants. In rare instances, aspirin in persons allergic to salicylates may result in life-threatening allergic episodes. MEPROBAMATE: DRUG DEPENDENCE: Physical and psychological dependence, and abuse have occurred. Chronic intoxication from prolonged ingestion of, usually, greater than recommended doses is manifested by ataxia, slurred speech, and vertigo. Therefore, carefully supervise dose and amount prescribed and avoid prolonged use, especially in alcoholics and others with known propensity for taking excessive quantities of drugs. Sudden withdrawal after prolonged and excessive use may precipitate recurrence of preexisting symptoms, e.g. anxiety, anorexia, or insomnia, or withdrawal reactions, e.g. vomiting, ataxia, tremors, muscle twitching, confusional states, hallucinations, and rarely convulsive seizures. Such seizures are more likely in persons with CNS damage or preexisting or latent convulsive disorders. Onset of withdrawal symptoms occurs usually within 12 to 48 hours after discontinuation; symptoms usually cease

within next 12-to-48-hour period. When excessive dosage has continued for weeks or months, reduce dosage gradually over 1 to 2 weeks rather than stop abruptly. Alternatively, a short-acting barbiturate may be substituted, then gradually withdrawn.

POTENTIALLY HAZARDOUS TASKS: Warn patients meprobamate may impair mental or physical abilities required for potentially hazardous tasks, e.g., driving or operating machinery.

ADDITIONAL EFFECTS: Since CNS suppressant effects of meprobamate and alcohol or meprobamate and other psychotropic drugs may be additive, exercise caution with patients taking more than one of these agents simultaneously.

USAGE IN PREGNANCY AND LACTATION: An increased risk of congenital malformations associated with minor tranquilizers (meprobamate, chloridazepam, and diazepam) during first trimester of pregnancy, has been suggested in several studies. Because use of these drugs is rarely a matter of urgency, their use during this period should almost always be avoided. The possibility that a woman of child-bearing potential may be pregnant at time of institution of therapy should be considered. Advise patients if they become pregnant during therapy or intend to become pregnant to communicate with their physicians about desirability of discontinuing the drug.

Meprobamate passes the placental barrier. It is present both in umbilical cord blood and in breast milk of lactating mothers at concentrations two to four times that of maternal plasma. When use of meprobamate is contemplated in breastfeeding patients, consider the drug's higher concentrations in breast milk as compared to maternal plasma levels.

USAGE IN CHILDREN: Keep preparations with aspirin out of reach of children. Equagesic[®] M is not recommended for patients 12 years of age and under.

PRECAUTIONS: ASPIRIN: Salicylates an-

tagonize uncoupling activity of probenecid and sulfapyrazole. Salicylates are reported to enhance hypoglycemic effect of sulfonylurea antidiabetics.

MEPROBAMATE: Use lowest effective dose, particularly in elderly and/or debilitated, to preclude over-sedation. Meprobamate is metabolized in the liver and excreted by the kidney; to avoid excess accumulation exercise caution in its use in patients with compromised liver or kidney function. Meprobamate occasionally may precipitate seizures in epileptic patients. It should be prescribed cautiously and in small quantities to patients with suicidal tendencies.

ADVERSE REACTIONS: ASPIRIN: May cause epigastric discomfort, nausea, and vomiting. Hypersensitivity reactions, including urticaria, angioneurotic edema, purpura, asthma, and anaphylaxis may rarely occur. Patients receiving large doses of salicylates may develop tinnitus.

MEPROBAMATE: CNS: Drowsiness, ataxia, dizziness, slurred speech, headache, vertigo, weakness, paresthesias, impairment of visual accommodation, euphoria, oversimulation, paradoxical excitement, fast EEG activity.

GI: Nausea, vomiting, diarrhea.

CARDIOVASCULAR: Palpitation, tachycardia, various forms of arrhythmia, transient ECG changes, syncope.

hypertensive crisis.

ALLERGIC OR IDIOSYNCRATIC: Milder reactions are characterized by itchy, urticarial, or erythematous maculopapular rash, generalized or confined to the groin. Other reactions include leukopenia, acute nonthrombocytopenic purpura, petechiae, ecchymoses, eosinophilia, peripheral edema, adenopathy, fever, fixed drug eruption with cross-reaction to carisoprodol, and cross-sensitivity between meprobamate, meprobamate and meprobamate carbamate. Rare, more severe hypersensitivity reactions include hyperpyrexia, chills, angioneurotic edema, bronchospasm, oliguria, and anuria. Also, anaphylaxis, exfoliative dermatitis, stomatitis, and proctitis. Stevens-Johnson syndrome and

bullous dermatitis have occurred.

HEMATOLOGIC: (SEE ALSO "ALLERGIC OR IDIOSYNCRATIC") Agranulocytosis, aplastic anemia have been reported, although no causal relationship has been established, and thrombocytopenic purpura.

OTHER: Exacerbation of porphyritic symptoms.

DOSE AND ADMINISTRATION: Usual dose is one or two tablets, 3 to 4 times daily as needed for relief of pain when tension or anxiety is present. Not recommended for patients 12 years of age and under.

OVERDOSE: Treatment is essentially symptomatic and supportive. Any drug remaining in the stomach should be removed. Induction of vomiting or gastric lavage may be indicated. Activated charcoal may reduce absorption of both aspirin and meprobamate. Aspirin overdose produces usual symptoms and signs of salicylate intoxication. Observation and treatment should include management of hyperthermia, specific antiepileptic electrolyte therapy for ketoadosis and dehydration, watching for evidence of hemorrhagic manifestations due to hypoprothrombinemia which, if it occurs, usually requires whole-blood transfusions. Suicidal attempts with meprobamate have resulted in drowsiness, lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Some suicidal attempts have been fatal. The following data, reported in the literature and from other sources, are not expected to correlate with each case (considering factors such as individual susceptibility and length of time from ingestion to treatment), but represent usual ranges reported. Acute simple overdose (meprobamate alone): Death has been reported with ingestion of as little as 12 gram meprobamate and survival with as much as 40 gram.

BLOOD LEVELS: 0.5-2.0 mg percent represents usual blood-level range after therapeutic doses. The level may occasionally be as high as 3.0 mg percent. 3-10 mg percent usually corresponds to

findings of mild-to-moderate symptoms of overdose, such as stupor or light coma. 10-20 mg percent usually corresponds to deeper coma, requiring more intensive treatment. Some fatalities occur. At levels greater than 20 mg percent, more fatalities than survivals can be expected.

Acute combined overdose (meprobamate with other psychotropic drugs or alcohol): Since effects can be additive, history of ingestion of a low dose of meprobamate plus any of these compounds (or of a relatively low blood or tissue level) cannot be used as a prognostic indicator.

In cases of excessive doses, sleep ensues rapidly and blood pressure, pulse, and respiratory rates are reduced to basal levels. Any drug remaining in stomach should be removed and symptomatic treatment given. Should respiration or blood pressure become compromised, respiratory assistance, CNS stimulants, and pressor agents should be administered cautiously as indicated. Diuresis, osmotic (mannitol) diuresis, peritoneal dialysis, and hemodialysis have been used successfully in removing both aspirin and meprobamate. Alkalinization of the urine increases excretion of salicylates. Careful monitoring of urinary output is necessary, and caution should be taken to avoid overhydration.

Relapse and death, after initial recovery, have been attributed to incomplete gastric emptying and delayed absorption.

HOW SUPPLIED: Bottles of 50 scored tablets.

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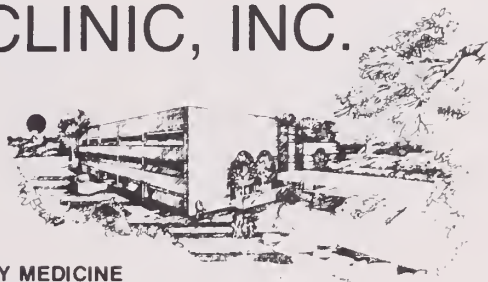
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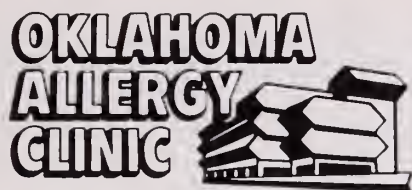
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Index to Advertisers

American-Medi Lease	xvii
American Medical Advertising	xiv
American Medical International, Inc.	xxxiii
The Arthritis Clinic	xxviii
Bank of Oklahoma	ix
Boots Pharmaceuticals, Inc.	vii, viii, xii, xiii
The Chickasha Clinic	xxviii
City of Faith	i
Department of Corrections	vi
Dustron Air Products	xi
C. L. Frates & Co., Inc.	160
Glass-Nelson Clinic	xxix
Harsha Orthopedic, Inc.	xiii
Eli Lilly and Company	ii
McAlester Clinic	xxix
Medical Arts Laboratory	xxx
Medical Arts Clinic of Ardmore	xxx
Medical Legal Seminars	158
Oklahoma Allergy Clinic	xxxix
Oklahoma City Clinic	xxvi
Oklahoma Hand Surgery, Inc.	xxxii
Oklahoma Plastic & Reconstructive Surgeons, Inc.	xxxiii
Oklahoma State Lodges	xxii
Oklahoma Cardiovascular & Thoracic Surgery Association, Inc.	xxv
Orthopedic & Arthritis Center	xxxix
OSMA Group Life Insurance Trust	x
Pension Consultants, Inc.	163
Plastic & Reconstructive Surgery Clinic, Inc.	xxxii
PLICO	inside front cover
Roche Laboratories	back cover, inside back cover, iv, v, vi, xi, xv, xvi, xviii, xix
Shawnee Medical Center Clinic, Inc.	xxxii
Staff Leasing, Inc.	xxi
Swanson Construction and Rentals	xxxiii
Tulsa Adjustment Bureau, Inc.	157
The Upjohn Company	xx
Urological and Genitourinary Surgery	xiii
Willow View Hospital	xxvii
Wilshire Garden Office Park	160
Wyeth Laboratories	xxiii, xxiv

The JOURNAL

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NEWS

Members of the Oklahoma State Medical Association, the constituent societies of the association, and all readers in general are invited to supply news items of general interest to the profession.

ADVERTISING

All advertising copy must be approved by the Editorial Board before acceptance for publication. General and miscellaneous advertising rates will be sent on request.

EDITING SERVICE

The Editorial Board reserves the prerogative to submit contributions to a Medical Editing Service when warranted. If such is felt necessary, the Editor will contact the author for approval, informing him that there will be a modest charge for this service.

REPRINTS

Authors will receive reprint order forms from the Transcript Press, PO Drawer 1058, Norman, Oklahoma 73070, prior to final publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

BACK ISSUES

Microfilm copies of back issues of *The Journal* may now be purchased from University Microfilms International, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

Tulsa physician C. S. Lewis, MD, has been elected treasurer of the American College of Physicians (ACP). The ACP represents 54,000 internists, related nonsurgical specialists, and physicians-in-training. Dr Lewis, a clinical professor of medicine at the University of Oklahoma Tulsa Medical College, has been the ACP's local leader for Oklahoma and a member of the ACP Board of Regents. He also has served as president of the Tulsa County Medical Society, the Oklahoma State Medical Association, the Tulsa County Heart Association, and the Oklahoma Heart Association.

The American Association of Foundations for Medical Costs (AAFMC) has changed its name to the American Medical Care and Review Association (AMCRA). The change was designed to reflect the growing role and involvement of the association. AMCRA is the only national organization representing individual practice associations (IPAs), health maintenance organizations, foundations for medical care, preferred provider organizations, and other organizations that stress professional utilization review.

Guidance center services are now being offered to residents of central and northeast Oklahoma City through a pilot project of the Oklahoma City-County Health Department. Individual, family, and group therapy sessions are available at the health department, 921 NE 23rd Street, through June 30. The guidance system is geared toward preventing mental illness through early intervention. Department officials hope the project will lead to the development of a permanent, fully staffed center serving areas that until this time have not had access to health department guidance services.

A proposed constitutional amendment authorizing the federal and state governments to restrict or prohibit abortions was opposed by the American Medical Association (AMA) in

comments to the Senate Subcommittee on the Constitution. The purpose of the amendment is to overturn the decision of the US Supreme Court holding that a woman has a constitutional right to an abortion. If enacted, the amendment potentially could deny women a necessary medical procedure, the AMA stated. It also could establish a national policy that gives a fetus the legal status of a person. Under that policy, physicians would be responsible for the welfare of every fetus whose legal and health interests would be equal to, but possibly in conflict with, those of the woman involved.

The 1983 Physical Therapy/Occupational Therapy Directory is available free of charge to physicians by writing to OPTA, PO Box 60395, Oklahoma City, Oklahoma 73146. The directory contains alphabetical listings of resources by city and by facility.

The Western Hemisphere Nutrition Congress VII will meet August 7-11, 1983, at the Doral Hotel on the Beach, Miami Beach, Florida. "Malnutrition: Determinants and Consequences" is the theme of the meeting. Sponsors include the American Medical Association's Food and Nutrition Program, the American Institute of Nutrition, Sociedad Latinoamericana de Nutricion, Canadian Society for Nutritional Sciences, and the American Society for Clinical Nutrition. Nutritionists, biochemists, physicians, educators, government officials, and others will gather at the meeting to examine the origins and consequences of malnutrition and to define the roles of different disciplines in solving the problems.

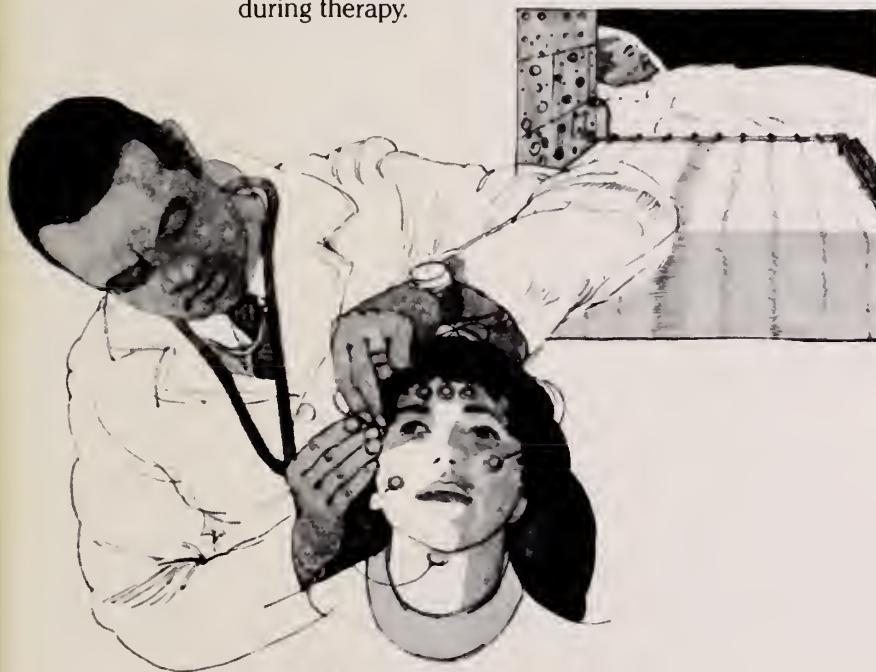
The Southern Medical Association will hold a Regional Postgraduate Conference August 19-21, 1983, at the Hyatt Regency, San Antonio, Texas. Attendees may choose from a wide range of clinical courses. For information on conference fees and registration, contact Jeanette Stone, Southern Medical Association, PO Box 2446, Birmingham, Alabama 35201.

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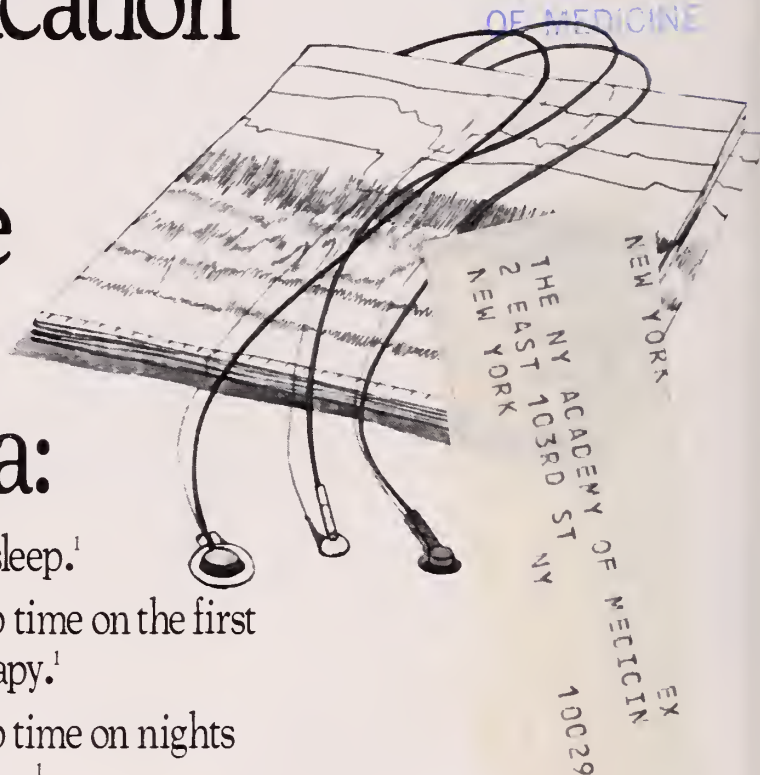
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